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VIDEO GAMES AND VIOLENCE: THE ONSLAUGHT ON YOUNG MINDS

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Video games have long been popular among people of all ages. The Covid-19 pandemic led to a significant surge in the use of digital technology globally including online gaming for children and adolescents.[1] Video games apart from being an enjoyable way to pass time, are also a way for people to link up with one another. Particularly, during the Pandemic, they offered distinctive mood-boosting effects by distracting from worries and stress, and easing isolation by encouraging connectivity between players. While there is no doubt that some games have educational content and play a positive role in promoting learning, motor, and coordination skills, concerns have been raised about the potential negative impacts of this recreational activity.[2]

Children and adolescents who spend excessive time playing games have poor social skills and spend less time socializing with their loved ones. Video games may also cause harm by decreasing sleep time, impairing attention, concentration, and school performance, causing less time to engage in physical activities and other hobbies, and promoting aggressive thoughts and behaviours.[3]

The degree to which video game content influences aggression and violence continues to be debated in scientific literature. The lack of definitive answers means the debate rages on. The speculations about the possible links to popular video game "Player Unknown's Battlegrounds (PUBG)" with cases of a tragic familicide by a teenager[4] as well as a few suicide incidents[5] in Pakistan have brought this question back into the spotlight: Do violent video games increase the probability of violent behavior?

Violent video games portray intentional attempts by individuals to inflict destruction on others. Many games emphasize negative themes like obscene & foul language, and lack of respect for others in authority in addition to killing people and animals. Due to the interactive nature of video games compared to other media, they may be particularly harmful.[6] Based on social learning theory, repeated exposure to violent games may cause players to become numb to violence and become more confrontational with an increased likelihood of mimicking the violence while reducing empathy.[7] Furthermore, some argue that desensitization to violence in general due to seeing violence is enhanced because of the interactive nature of games.[8]

It is pertinent to highlight though, that among a huge population of children and adolescents who play video games, only a very small proportion ever turns to violence in actual life. Those who are most at risk for exhibiting violent behaviors tend to have many other risk factors like violence in the family, parenting styles, substance abuse, etc., which make such behavior more likely.[9] Certain personality traits like being emotionally unstable, prone to rage and hostility, depression, and impulsivity may also contribute to the risk of violent behavior associated with games along with the relevant conditioning environment in-home or school.[10] Video games activate similar reward system in the brain as gambling and drugs of abuse, thus making children with psychiatric illnesses specifically vulnerable to the negative impact of video games. Some studies though have disputed the association between violent video games and actual violence.[11]

World Health Organization 2019, officially recognized "gaming" as a mental health disorder where gaming becomes the only activity in a person's life and is done to the neglect everything else. Some danger signals for gaming disorder include an obsession with gaming, difficulty in reducing time spent in playing games, displaying withdrawal symptoms, and lying about the time duration they engage in gaming.[12] The WHO recognition, although crucial, does little to help parents, teachers, and professionals in identifying behavior patterns and other risk factors in children and adolescents who are likely to fall prey to this addictive behavior. The American Psychological Association (APA) has also reaffirmed its stance that violent video games could increase aggression.[13]

Some systematic reviews have also shed light on this risk and highlighted protective factors linked to gaming.[14] One of the most frequently cited factors especially for pre-teens is the quality of parenting and parent-child interaction, where positive parenting is less likely to lead to addictive gaming.[14] Psychopathology like Attention deficit hyperactivity disorder (ADHD), social phobia, depression, and autism spectrum disorder (ASD) are predictive of internet addiction.[9] However, current international psychiatric classification systems, ICD-11 and DSM-5 do not yet include this category. However, it is very likely to be a part of future versions.

What can be done?

As professionals, we deal with questions like 'what is healthy screen-time or 'Are online games bad?' for which there is no straightforward answer. However, the American Academy of Pediatrics and the World Health Organization have recommended certain limits to screentime till five years of age. For older children, although the time is not defined, parents should ensure that children have enough time daily for necessary activities including 8 to 12 hours of sleep, 1 hour of vigorous physical activity, schoolwork, and social-time with family and friends. The time remaining can be used for internet and gaming-related activities but here again, the content needs to be monitored for its age and tone-appropriateness. There is also an emergent need for educating children and adolescents about online citizenship and treating their online presence as similar to being in a physical public place but with more specific risks.[15]

Strategies to improve emotional awareness and regulation will help in keeping aggressive outbursts and violence at bay as long as it is identified in time. Mass-media campaigns about screen use as well as targeted workshops for parents and teachers are the need of the hour.

In a nutshell, video games are no doubt a wonderful tool for entertainment and learning, but younger minds still need our support and guidance to navigate their way safely through this new, slightly scary 'digital world.

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INCIDENCE OF ACCIDENTAL AWARENESS DURING GENERAL ANESTHESIA – A TERTIARY CANCER CARE HOSPITAL EXPERIENCE

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ABSTRACT

Objective: To find out the incidence of accidental awareness during general anesthesia in a cohort of cancer patients in a tertiary care center in Pakistan.

Methodology: This was an observational study conducted on cancer patients undergoing surgery under general anesthesia in Shaukat Khanum Memorial Cancer Hospital and Reserach Center. A total of 1000 patients were interviewed by a registered nurse in the Post-Anesthesia Care Unit (PACU) using the modified Brice questionnaire. The outcome measured was the incidence of awareness and/or dreaming intraoperatively.

Results: Among the total 1000 patients, 516 patients were male and 484 were females. There were 356 patients under the age of 40, 462 between the ages of 41 and 60, and 182 above 60 years. Most of the patients were American Society of Anesthesiologists (ASA) Grade 2 (n = 834), while 14 were ASA Grade 1 and 152 were ASA Grade 3. The total intravenous anesthetic was used on 83 patients, whereas balanced anesthesia was used on 917. Elective surgery was performed on 968 individuals, while emergency surgery was performed on 32 others. Two patients had definitive awareness (n = 2) and two patients described dreaming during surgery (n = 2).

Conclusion: Our study found the incidence of awareness during general anesthesia in the adult cancer population to be at par, if not more than that reported worldwide.

Keywords: General Anesthesia; Accidental Awareness; Cancer Care

INTRODUCTION

Accidental awareness during general Anesthesia (AAGA) is defined as "consciousness and subsequent explicit recall of intra-operative events, whether the experience is spontaneously reported by the patient, or detected by direct questioning or prompting."[1] It may manifest as merely a vague memory of people talking during surgery, or it may even be as horrifying as feeling excruciating pain from the ongoing surgery while being unable to move or say anything. This is one of the uncommon complications of general anesthesia that is not only a medico-legal debacle for the anesthetist but can also be extremely distressing and psychologically traumatic to the patient.[2]

While it is a difficult side effect to report and recognize, previous literature[3, 4] has estimated an incidence of 1-2 in 1000 patients in general surgical population. However, the results of the more recently conducted 5th National Audit Project (NAP5)[5] indicated an incidence of merely 1:19,600, which is 20 times lesser in frequency than postulated earlier. Considering the possibility of underestimation of actual figures, the real incidence of awareness, therefore, remains controversial.

Suggested risk factors mentioned in the literature include patient factors such as female sex[6], higher ASA physical status[7], obesity[6], previous history of awareness[8], and certain types of surgeries like obstetric[6,9], cardiac[10], and emergency surgery.[11] Data suggests that even the pediatric population may develop intraoperative awareness.[12] In addition, patients may have a genetic propensity to develop awareness.[13] Studies have also suggested the influence of using neuromuscular blockade[6,14] as well as anesthetic technique (Total Intravenous Anesthesia vs. balanced anesthesia) on the incidence of awareness. A vast majority of patients have idiopathic cases of awareness[15] where no anesthetic or other risk factors are identified.

Numerous researches have been conducted to detect the occurrence of this phenomenon with electroencephalographic techniques but none of them proved to be reliable to identify and prevent intraoperative

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awareness. To establish awareness post-operatively, the Brice questionnaire[16] was developed initially and then was modified by Abouleish and Taylor[17] as the original did not distinguish awareness from dreaming.

This study was initiated to detect the incidence of AAGA and to identify the possible risk factors associated with its occurrence. This was particularly important due to a lack of data in this specific population subset in Pakistan.

METHODOLOGY

This was a cross-sectional study done at Department of Anesthesia Shaukat Khanum Memorial Cancer Hospital and Reserach Center Lahore - Pakistan. Based on the previously estimated[3,4] incidences of 0.1%, a sample size of 995 patients was calculated, assuming a precision of 0.02% and a 99% confidence interval. A total of 1000 patients were enrolled to account for missing data, drop-outs, and/or losses to follow-up.

We started including adult cancer patients undergoing elective or emergency surgery under general anesthesia from June 2021 and the enrollment continued until our sample size of 1000 patients was achieved i.e., until September, 2021.

Patients were excluded if they were under the age of 12 years, had ongoing psychiatric medication, or altered sensorium. Patients who died or required postoperative mechanical ventilation in the perioperative period were also excluded.

Intraoperatively, the conduct of general anesthesia was according to standard clinical practice. Monitoring included invasive or non-invasive blood pressure, pulse oximeter, ECG, end-tidal carbon dioxide concentration as well as end-tidal anesthetic concentration (ETAC) where required. Entropy or Bispectral index (using the BIS™ Complete 4-Channel Monitoring System) was used when Total Intravenous Anesthesia (TIVA) was employed.

Some patients received balanced anesthesia i.e. intravenous induction with or without muscle relaxant and maintenance with inhalational anesthetics. Others received TIVA with target-controlled infusion (TCI) of Propofol for induction as well as maintenance. Analgesia included Fentanyl, Paracetamol, and/or Morphine as required. Peripheral or central neuraxial blocks were used where warranted.

The choice of anesthetic modality and drugs was as per the patient's condition and the attending anesthetist's discretion. The opted plan was, however, mentioned on record.

Protocol for Detection and Follow-up of patients with AAGA

All the patients were interviewed postoperatively by a registered nurse at the time of discharge from the PACU using a simple structured questionnaire using a few questions from Brice et al.[16,17,18] They were asked if they had a history of awareness during any previous anesthetic and whether or not they had any disturbing dreams or recalled any intra-operative events during the current operation.

Those with the suspected occurrence of awareness during the primary interview then underwent a structured interview by the primary investigator 7 days after surgery using the Brice questionnaire to confirm the finding and to classify the incident as possible or definitive. Patients were requested to describe details of the episode including visual, auditory, movement, or pain perception. Moreover, they explained the possible cause(s) of the awareness and offered psychological support and treatment, as required.

Intraoperative anesthetic data recorded on our pre-designed study proforma was also analyzed for evaluating possible risk factors contributing to the occurrence of awareness.

The collected data were analyzed with Statistical Package for the Social Sciences® (SPSS Inc., Chicago, IL, USA.), version 23.0. Descriptive data, anesthetic modality, and type of surgery were described in numbers and percentages. Thereafter, patients were evaluated concerned knowing high risk factors (categorical variables) such as female gender, previous history of awareness, etc. Those with the incidence of awareness were compared with the remaining number of patients using the $\leq$ Fisher's exact test (two-sided). A p-value 0.05 was considered significant.

Table 1: Descriptive data of studied groups

Parameter		Number (%)
Gender	Male	516 (51.6%)
	Female	484 (48.4%)
Age	< 40 Years	356 (35.6%)
	41 – 60 Years	462 (46.2%)
	> 60 Years	182 (18.2%)
Grades as per the American Society of Anesthesiologists (ASA)	ASA 1	14 (1.4%)
	ASA 2	834 (83.4%)
	ASA 3	152 (15.2%)
	ASA 4	NIL
	ASA 5	NIL

Table 2: Anesthetic and surgery characteristics (n = 1000)

Parameter		Number (%)
Anesthetic technique	Total Intravenous Anesthesia	83 (8.3%)
	Balanced Anesthesia	917 (91.7%)
Modality	Elective	968 (96.8%)
	Emergency	32 (3.2%)
Type of Surgery	Breast	260 (26%)
	Gastrointestinal surgery	174 (17.4%)
	Gynecological surgery	40 (4%)
	Hepatobiliary surgery	27 (2.7 %)
	Maxillofacial/otolaryngology	67 (6.7%)
	Neurosurgery	38 (3.8%)
	Orthopedic	39 (3.9%)
	Thoracic surgery	14 (1.4%)
	Thyroid/Parathyroid	38 (3.8%)
	Urology	303 (30.3%)

Table 3: Key characteristics of two identified AAGA cases

Case #	1	2
Surgery	Right hip disarticulation (osteosarcoma)	Left breast lumpectomy + axillary lymph node dissection
Age (years)	12	39
American Society of Anesthesiologists	2	2
Pre-existing risk factors	NIL	Prior history of awareness
Premedication	NIL	NIL
Anesthetic	Propofol Total Intravenous Anesthesia	Propofol Total Intravenous Anesthesia
Neuromuscular block	Atracurium	Atracurium
BIS target reading	40 – 60	40 - 60
Surgery duration	4 hours, 30 minutes	1 hour, 40 minutes
Awareness report	On direct questioning, with agitation	Spontaneous
Perception	Conversations between surgical staff, tactile sensation, no pain	Pain, tactile sensation of incision, inability to move or breathe

Table 4: Analysis of different risk factors for developing AAGA, when compared to 2 patients who developed awareness

	Report (Proportion)	p-value
Female Gender	484 (48.4%)	0.17
Prior History of Awareness	2 (0.2%)	0.02*
Total Intravenous Anesthesia	25 (2.5%)	0.001*
Use of Benzodiazepines	383 (38.3%)	0.52
Use of Neuromuscular blockade	613 (61.3%)	0.26
Emergency Surgery	32 (3.2%)	1.0
Emergency Surgery	32 (3.2%)	1.0

* *P*-value ≤ 0.05. Analyzed using Fisher's exact test.

RESULTS

Descriptive statistics of the patients are briefed in Table 1 while Table 2 depicts the anesthetic technique and proportion of the types of surgeries.

From the available data, we identified two patients with definitive awareness i.e. an incidence of 0.2%. Their characteristics are summarized in Table 3. Both patients were debriefed about the incident postoperatively and offered psychological support but they refused and did not report any lasting emotional or psychological distress in subsequent interviews.

Patients that developed awareness were younger (mean age 26±18.3) compared to the rest of the population (mean age 46.9±14.4). However, this difference was not statistically significant (p-value = 0.41).

ASA status and type of surgery had no significant relationship with the incidence of awareness (p-value = 0.81 and 0.17 respectively).

Table 4 illustrates a detailed report and analysis of patients grouped in high-risk factor variables and their respective significance when compared to patients who developed awareness.

Furthermore, two patients (0.2%) reported unpleasant dreaming intraoperatively. Both were given balanced anesthesia: induction with Propofol, and maintenance with Sevoflurane and Atracurium for neuromuscular blockade. Interestingly, both were also pre-medicated with Midazolam. They could recall their dreams but not any intraoperative events. None of them agreed to receive any psychological assistance.

DISCUSSION

In the past, studies have estimated the in-

cidence of Accidental Awareness during General Anesthesia (AAGA) to be 1-2 in 1000 patients.[2,19] Other studies done in China, Spain, and Brazil have even reported incidences of definitive awareness as high as 0.41%, 1% and 2.5%, respectively.[15,20,21] In the literature review, several risk factors have been identified viz. female gender; young age; history of AAGA; rapid sequence induction; use of neuromuscular blockers; emergencies; and obstetric, cardiac or thoracic surgeries.[5, 22] According to some, extensive surgery in oncological patients may also make them more prone to develop awareness due to accumulation of multiple causative factors at once e.g. massive blood loss or one lung ventilation[15]. In some patients, it may even occur despite adequate anesthesia and in absence of any risk factors.

In our study population, the patients who reported AAGA (n = 2) had several of these independent risk factors i.e., both the patients were young (< 40-years old), females, and cancer patients. Both patients received neuromuscular blockade and Total Intravenous Anesthesia (TIVA), which are both known to cause awareness when compared with balanced anesthesia using halogenated anesthetics with ETAC measurement.[5, 15] Additionally, one of these patients had a history of awareness during a previous anesthetic. Of these, TIVA and a positive history of awareness showed a statistically significant relationship with the incidence of awareness during our analysis.

It is complicated to identify the occurrence of AAGA due to possible shortcomings in the anesthetic system not alarming the attending anesthetists of such an event. It may also be overlooked by the patient resulting in their failure to report it spontaneously. We used a structured interview for explicit recall of intraoperative events and detection of AAGA. This served as a strength of our study since such an interviewing scheme is a strongly preferred methodology for correctly estimating the incidence of awareness. This has been previously demonstrated by Mashour et al. who described a five-fold difference in the incidence of awareness while comparing two strategies of assessment: 0.1% in patients that underwent structured interviews with direct questions vs. 0.02% in routine quality assurance approach conducted on the first postoperative day, inquiring about any troubles during anesthesia.[23]

In addition, we used few questions from the Brice questionnaire[16] for the interviews that have formerly been used in various studies[4, 18, 24] to minimize any subjective bias. To further eliminate bias by anesthetists, our initial interviews were carried out by an RN that was not involved in the anesthetic management of the patient intraoperatively.

Another strength of our study is that we incorporated a delayed re-interview into our study design and this approach is also known to detect cases more efficiently.[9,24,25]

A potential limitation of our study was a deficit in data collection. In earlier literature, the use of a BIS monitoring system had been shown to reduce the risk of awareness by 82%.[25] While both our awareness cases involved TIVA with BIS monitoring, our pro forma did not include a record of intraoperative BIS readings since our main outcome to be measured was the incidence of accidental awareness. Our results were more consistent with those reported by Avidan et al. in their B-Unaware trial followed by the Bispectral Index or Anesthetic Gas to Reduce Explicit Recall (BAG-RECALL) trial, which invalidated the superiority of Bispectral Index (BIS) monitoring over end-tidal anesthetic concentration (ETAC) monitoring in preventing awareness.[26,27,28] Similar findings were outlined by Lewis et al. who noted no difference in the incidence of awareness between BIS or ETAC-guided anesthesia.[29] Our shortcoming may, therefore, be considered trivial since recent evidence to suggests that awareness may occur despite the maintenance of BIS and ETAC values.[30]

While on one hand, one may generalize our results into their everyday anesthetic practice considering that our study involved no change in routine clinical practice, on the other hand, the results may not be hypothesized for all surgical populations since the study took place specifically in the cancer population.

Nonetheless, we suggest that it is imperative to identify patients at high risk for developing this harrowing complication and subsequently, improve anesthetic preparation (e.g., equipment and drug checking) and apply appropriate strategies such as maintaining ETAC, neuromuscular monitoring, and anesthetic depth monitoring (with BIS or Entropy, etc.) to curb the incidence of intraoperative awareness thereby preventing serious psychological outcomes.

CONCLUSION

Our study found the incidence of awareness during general anesthesia in the adult cancer population to be at par, if not more than that reported worldwide.

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Author's Contribution

TA conceived the idea, finalized the study design, and collected the data. RSQ contributed to data analysis, data Interpretation, and writing the manuscript. MA collected the data and designed the questionnaire. AAK supervised and contributed to the revision of the manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

ASSOCIATION OF SCAR TENDERNESS AND OTHER CLINICAL SIGNS WITH SCAR COMPLICATIONS IN PATIENTS UNDERGOING THE TRIAL OF LABOR AFTER CESAREAN SECTION

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ABSTRACT

Objective: To determine association between scar tenderness and other clinical signs of scar complications in patients undergoing a trial of labor after cesarean section.

Methodology: This case-control study was conducted in the Department of Obstetrics and Gynaecology, Lady Reading Hospital, Peshawar from June 2017 to June 2019. Patients with scar complications at repeat emergency cesarean section, after a failed trial of labor, were taken as cases. Controls were patients, who were found to have intact scars at repeating emergency cesarean delivery after trial of labor. Cases were compared with controls for the presence of scar tenderness, maternal tachycardia, and Cardiotocography (CTG) abnormalities. Data were analyzed using SPSS Version 23.0.

Results: Sixty-six women were enrolled, with an age range of 21-40 years with a mean age of 27±43.42 years for cases, and 28.66±4.85 for controls. The association of scar tenderness alone (p=0.2), maternal unexplained tachycardia alone (p=0.886), and abnormal CTG alone (p=0.44) with scar complications were not significant. A significant association was observed between a combination of scar tenderness, abnormal CTG, and maternal tachycardia with scar complications (p=0.006, aOR=21.33, CI:2.37-19.20).

Conclusion: A combination of clinical signs including scar tenderness and unexplained maternal tachycardia as well as abnormal CTG serve as a valid indicator of impending scar complications and should be included in the monitoring of women undergoing the trial of labor after a previous cesarean.

Keywords: Scar Tenderness; Scar Dehiscence; Maternal Tachycardia.

INTRODUCTION

The issue regarding the growing rate of cesarean section (CS) globally, has focused on vaginal birth after cesarean (VBAC).[1] Though after CS, the rate of vaginal delivery is increasing propitiously due to concern over maternal as well as perinatal mortality and morbidity it is still limited.[2] VBAC can be encouraged by appropriate monitoring of labor along with the facility of timely intervention. In general, the spontaneous VBAC success rate is between 60-82% in published studies.[3,4]

Nevertheless, there is an obvious rise in perinatal and maternal morbidity and mortality in the event of a failed trial of labor.[5,6] Rupture of the uterine scar is the utmost important risk of VBAC, and one of the prerequisites of VBAC is monitoring for the feature of scar complications. These include monitoring of cardiotocography Cardiotocography (Cardiotocography (CTG)), abdominal pain persisting between contractions, acute onset scar tenderness, hematuria or abnormal vaginal bleeding, maternal tachycardia or shock, cessation of uterine activity, and loss of station of the presenting part. Out of these, the most persistent finding is an abnormal Cardiotocography (CTG), found in nearly 66-76 % of cases along with rupture.[7] Among 22% of patients abdominal pain has been reported,[8] abnormal vaginal bleeding in 11-67% and maternal shock in 22-46% of patients.[9] Palpation of the abdominal scar can suggest possible scar dehiscence. Though it's an established clinical practice, its predictive value has not been confirmed in studies.[9]

In the recent past, no comprehensive study has been done in Pakistan, on the association of clinical signs with impending scar complications in patients having a

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trial of labor after previous cesarean delivery. Hence, the objective of this study was to find out the association of scar tenderness alone and in combination with other features with scar complications in patients experiencing repeat emergency cesarean section after a trial of labor is terminated. The results of this study will provide us with local statistics, which can help to make changes to our departmental protocols and will also open a window for further research.

METHODOLOGY

This was an unmatched case-control study carried out in the department of Obstetrics & Gynaecology, Lady Reading Hospital, Peshawar from June 2017 to June 2019. Enrolled patients were, those with a history of previous cesarean section(CS), having repeat emergency cesarean section after a trial of labor was terminated. Patients with scar complications (thinned out the scar, scar dehiscence) at repeat cesarean were classified as cases and those having intact scars were defined as controls. After the selection of each case (as defined above), the next available women who had fulfilled the criterion for controls (given above) were selected as controls. This ensured a case and control ratio of 1:1. Cases and controls were then compared for various features like scar tenderness alone during the trial of labor, unexplained maternal tachycardia alone, abnormal Cardiotocography (CTG) alone, a combination of scar tenderness with abnormal Cardiotocography (CTG), and maternal tachycardia separately and a combination of all thfeaturesture including scar tenderness, abnormal, Cardiotocography (Cardiotocography (CTG)) and maternal tachycardia. Data about all these features along with tthepatients' age, parity, Ber clinical condition,n and, labor progress was obtained from the patient's hospital document. Patients referred with complications of the trial of labor (obstructed labor, ruptured uterus, non-progress of labor scar rupture/dehiscence); with intrauterine fetal death and previous two or more cesarean sections were excluded from the study.

The study protocol was approved by the Ethical Committee of Lady Reading Hospital Peshawar, and all included patients were provided written informed consent. On probability consecutive sampling technique was done. The sample was calculated using the Open EPI online calculator for sample size estimation using a 95% confidence interval, level of significance as 5%, Power of study as 80%, Proportion of control with exposure as 0.4%, and the odds ratio of 4.3 for Association of abnormal Cardiotocography (CTG) and Scar complications.[11] Patient information was recorded on pre-designed forms. Data were analyzed using SPSS, Version 23.0. Continuous variables were reported as mean and standard deviation and categorical variables as numbers (percent). The Chi-square test was applied for the association between categorical variables. Multivariate logistic regression analysis was carried out to find adjusted odd ratios and to assess the independent effect of each variable.

RESULTS

There were 66 women in the study. Group A (cases) comprised of 33 patients and Group B (controls) consisted of 33 patients in 1:1. The mean age of Group A patients was 27.42±4.42 years and of Group B patients was 28.66±4.85 years. The mean BMI of Group A was 25.54±4.54 kg/m^2 and of Group B was 25.93±4.39 kg/m^2 respectively. There were 16 (48.48%) primiparas in Group A and 08 (24.24%) primiparas in Group A had 17 (51.51%) multiparous patients and Group B had 25 (75.75%) multiparous patients. In Group A history of previous successful VBAC was present in 11 (33.33%) patients and in Group B 13 (39.39%) patients had previous successful VBAC.

Table 1 describes the logistic regression analysis for association of scar tenderness and other signs with scar complications. According to the table, combined effect of scar tenderness, abnormal Cardiotocography (CTG), and maternal unexplained tachycardia had a significant association with scar complications (p=0.006) with an adjusted odds ratio of 21.33 and the upper and lower lvel of confidence interval as 2.37 and 19.20 respectively.

Table 1: Summary of Logistic Regression Analysis for Association of Scar Tenderness and Other Signs with Scar Complications

	Group A N (%)	Group B N (%)	b (SE)	95% CI for Odds Ratio			
				p- value	Adjusted Odds Ratio	Lower	Upper
Constant	-	-	-.575 (0.417)	0.16	0.56	-	-
Scar Tenderness (ST) Alone	8 (24.24)	12 (36.36)	-.580 (.544)	0.287	0.56	0.193	1.627
Abnormal CTG Alone	3 (9.09)	6 (18.18)	-.118 (0.821)	0.44	1.78	0.403	7.84
Maternal Tachycardia Alone	4 (12.12)	5 (15.15)	.575 (.757)	0.886	0.88	0.178	4.441
ST Along with Abnormal CTG	4 (12.12)	4 (12.12)	-.118 (0.961)	0.902	0.88	0.135	5.84
ST Along with Maternal Tachycardia	2 (6.06)	1 (3.03)	1.269 (1.294)	0.327	3.55	0.28	44.88
ST with Tachycardia with Abnormal CTG	12 (36.36)	1 (3.03)	3.060 (1.121)	0.006	21.33	2.37	19.20

NOTE R2 = .255 (Cox && Snell), R2 = .341 (Nagelkerke). Model Chi-Sq. (df= 8), 19.471, p value = .013. * = p<0.05, ** = p< 0.01 & *** = p<0.001.

DISCUSSION

In our study, a combination of clinical signs including scar tenderness, unexplained maternal tachycardia, and Cardiotocography (CTG) abnormalities have been found to have a statistically significant association with scar complications in patients having a trial of labor after previous cesarean birth.

For the past several years, the incidence of cesarean section (CS) has been rising. To decrease this growth rate, and reduce the immediate and long-term complications of repeat cesarean births, patients' financial as well as medical pressure have led to increased use of trials of labor after a cesarean section. The added risk of scar complications in these patients compared to patients with non-scared uteri needs modified care in labor. As scar complications can significantly increase maternal morbidity and are associated with perinatal mortality and morbidity. This modified care includes monitoring for timely diagnosis and management of scar complications. Along with the routine geomaterial monitoring, emphasis is on certain signs for timely detection of complications. These include maternal vitals, scar tenderness, and fetal heart rate changes. This study was carried out to ascertain the significance and association of scar tenderness and other clinical signs alone and in combination with scar complications. After previous CS, vaginal birth is a persuasive choice that can serve as an alternative for repeat CS and help to lower the rate of CS as a good proportion of women meet the eligibility criterion of vaginal birth after previous cesarean delivery on average of 74.8%[11] and a fairly success rate of around 70.7%.[12]

Few studies were done on VBAC that detailed scar tenderness and other clinical signs alone and in combination as one of the important reasons for the failure of a trial of the scar. In our study, none of the clinical signs alone was significantly associated with scar complications. Maimoona and colleagues also concluded from their study that scar tenderness alone is not associated with scar complications.[12] In a study done in India scar tenderness was found to be a reliable predictor of scar complications with sensitivity and specificity of 92.3% and 3.8%, respectively. The likelihood ratio of a positive sign of scar tenderness being associated with scar complications in labor is 1.48.[5] Similarly in another study done in Pakistan scar tenderness was found to be a strong predictor of scar complications with a sensitivity of 86.3 percent.[10] This is in contrast to our findings. In our study scar tenderness alone didn't show a statistically significant association with scar complications. This difference in findings can be explained by the relatively subjective nature of this clinical sign. Also, the appearance of this sign in labor can result in varying degrees of concerns and the resultant time to intervention may also vary. All of these can have an impact on the findings observed in different studies. In the same Indian study maternal tachycardia was not a significant predictor of scar complications in labor (p value=0.2).[5] Our study also shows the same finding i.e., maternal tachycardia is not significantly associated with scar complications. The study designs of both these two studies were different from our study.

Like the other two clinical signs of tenderness and maternal tachycardiac abnormalities alone were also not found to be associated with scar complications in our study. However, in a multicenter case-control study done by David and colleagues, there was a significant association of fetal heart rate abnormalities with scar rupture in the hour preceding the diagnosis of scar rupture.[13] In a case-control study done by Anderson, it was found that Cardiotocography (CTG) abnormalities alone are not predictive of scar complications.[14] Our study emphasizes the need to bear the broader clinical picture in mind before terminating a trial of labor in favor of emergency repeat cesarean section taking into account scar tenderness, maternal unexplained tachycardia, and Cardiotocography (CTG) abnormalities in combination. Signs considered in isolation from each other can result in unnecessary repeat cesarean deliveries.

The previous practice of pre-labor assessment of uterine scar as a sole guide to deciding regarding VBAC is no longer in use in modern obstetrics because of its limited clinical utility. Labor pains are the best test to assess the integrity of uterine scar. However, scar complications in the event of VBAC almost double all the maternal and fetal complications of emergency cesarean delivery. So reliable signs and predictors of impending scar complications are the need of modern obstetrics.[15,16]

CONCLUSION

A combination of clinical signs including scar tenderness, Cardiotocography (CTG) abnormalities, and unexplained maternal tachycardia serve as valid indicators of impending scar complications and should be included in the monitoring of women undergoing the trial of labor after a previous cesarean.

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Author's Contribution

NL convinced the idea, drafted the manuscript, and finalized the manuscript. QQ Collected the data and edited the manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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PATTERN OF PSYCHIATRIC REFERRALS IN A TERTIARY CARE PUBLIC SECTOR HOSPITAL OF KARACHI

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ABSTRACT

Objective: To observe the frequency and pattern of Psychiatric referrals by Emergency and In-patient Departments (IPD) of tertiary care public sector hospital of Karachi.

Methodology: A comparative cross-sectional study was conducted in the referred cases of Emergency (ER) and In-patient Department (IPD) for Psychiatric consultation from December 2019 to May 2020. The available medical records and International Classification of Diseases (ICD-10) diagnostic criteria were used for assessment and the record register was maintained on regular basis for data collection. The Data was analyzed to compare the findings in both ER and IPD.

Result: There was a total of 281 referrals recorded in the register during six months. Among those112 (39.9%) were made from ER while 169 (60.1%) were from IPD. Most of them were young (33.4±13.5 years) and were almost equally distributed in both genders [Male=141 (50.2%) and Female=140 (49.8%)]. Altered or disorganized behavior, 88 (31.3%) followed by unexplained somatic complaints, 36 (12.8%,) and past psychiatric history, 25 (8.9%) were the most frequent reason for a referral from IPD. Suicide and deliberate self-harm were more common in ER 12 (4.3%) than that in IPD 6 (2.1%).

Conclusion: Overall the frequency of Psychiatric referrals was low in comparison to the patient population and most of those were from the inpatient department than the ER.

Keywords: Emergency; Inpatient; Psychiatric; Referral; Consultation.

INTRODUCTION

Mental Health problems are prevalent in the community and even more frequent in the hospital population. World Health Organization has estimated the high burden of mental health problems all over the world, especially in middle and low-income countries. That burden rises further particularly when those are comorbid with chronic medical illnesses such as diabetes, and cardiovascular and systemic inflammatory diseases, which significantly complicates the prognosis and even increases mortality. Despite this fact, it has been established with evidence, that it is not only the general public but also the general health professionals who bear discriminatory attitudes towards psychiatric problems that ultimately result in either ignoring the care or mismanagement of those patients. Psychiatric patients or those with apparent behavioral and psychological disturbances even in a hospital setting are neglected in various ways. Generally, they face difficulties by misdiagnosing, mislabeling, and compromising their care or by referring them to psychiatry without proper communication of information to them and psychiatrists.[1,2]

The available research work in neighboring countries like India revealed certain significant findings related to Psychiatric referrals in the hospitals; they had found very limited psychiatric referrals even in tertiary care setup. Only those cases were being referred who had either acute psychiatric presentation, made a suicidal attempt, or presented with a known psychiatric problem. Among those patients, 20-30% of cases were found to be misdiagnosed with psychiatric disorders and later on found to be suffering from Organic mental disorders instead. The neurotic, stress-related, or somatoform disorders (15-40%) were among the frequently diagnosed psychiatric morbidities in the general hospital population. Most of the departments including surgical, pediatric, and, various subspecialty units; Ophthalmology, and ENT do not usually refer their patients to the psychiatry department unless their behaviors become agitated or unmanageable with them. The highest referral cases had been reported from internal medicine and neurology departments.[3,4] The general problem that arises because of not making timely referrals is the undue economic burden on individual and public sector hospital resources. The poor identification and mismanagement of psycholog-

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ical problems are invariably common even in a pediatric group that significantly affects childhood developmental time.[5] There is usually no regular trend of Psychiatric consultations in general health settings of public sector hospitals in middle and low-income countries. Grover et al[6] studied the effects of two models for Psychiatric consultation and liaison work, a) consultation and b) hybrid. They found the hybrid model to be more effective where mental health professional was supposed to be placed full time in the general health setting to early identify psychosocial issues, collaborate with the other members of the team for timely, safe, and individualized interventions, and train them to be confident enough to practice mental health principles as an integrated segment of general health care. While in the consultation model mental health professionals will only provide services when referrals are sent to them for particular cases identified by non-mental health professionals for their specific reasons. However, the consultation model is somehow being practiced in developing countries like Pakistan because of poor localization of resources and a lack of acceptance of the importance of integrated mental health care with general health.

Primarily very limited work has been done in Pakistan in this area, however, Minhas et al work highlighted the importance of the inclusion of psychiatric consultation and liaison services in the general health setting.[7] Imam et al through their work identified a significant burden of undiagnosed common mental health problems especially depression in hospitalized medical patients due to inadequate skills in the health professionals, which ultimately complicates economic resources and overall disease prognosis.[8] Hence it is the intense demand of the current time, especially in lower and middle economic countries like Pakistan where there is a dearth of resources specifically to cater to mental health needs, to develop the already existing mental health services with manpower, infrastructure, and allocation of available resources by adequate budgeting. In public sector hospitals poor patients frequently visit ER because of two major reasons first due to poor resources; they avail health services only when necessarily required and secondly, poor awareness and lack of acceptance of mental health conditions their help-seeking is either delayed or happens only when they are being referred due to disruptive or strikingly unmanageable behavior. Therefore, besides the outpatient department, ER is also the major source for admitting patients and referring them to other facilities. This creates a burden of care and compromise in the delivery of appropriate services as per the patient's needs. Consequently, the known psychiatric patients are either being ignored in receiving physical care because they are directly referred to psychiatrists despite their visit for physical complaints or they are being taken for granted in giving care. The patients with acute behavioral disturbance and those with ambiguity in medical diagnosis are referred to psychiatrists without a complete medical assessment. There is also no system of exchange of information or collaborative communication for those cases. The patients who get admitted to other wards are also being discriminated against if they show altered behavior or their medical diagnosis could not establish. In our setup no work has been done in this area hence we lack in having general data that define the actual burden of the problem so that relevant constructive measures would be taken by forwarding it to higher authorities. This study aims to observe the frequency and compare the pattern of presentation of psychiatric referrals by both emergency and inpatient departments of a tertiary care public sector hospital in Karachi. It is intended to make mental health services an integrated part of each general health setting and also empower health professionals to work collaboratively to promote health holistically by managing both health aspects physical and psychological for better prognosis and outcome.

METHODOLOGY

This is a descriptive cross-sectional study that was conducted in the Psychiatry department of Dr. Ruth K.M. Pfau Civil Hospital Karachi for the period of six months from Dec 2019 to May 2020. The study was approved by the institutional review board [(IRB-1447/ DUHS/ Approval/2019/)]. The study Participants were the hospitalized patients referred for Psychiatric consultation from emergency and inpatient departments (medical, surgery, and allied wards where patients are admitted). They were selected through the non-probability consecutive type sampling technique; all cases included those who satisfied the set inclusion criteria.

The inclusion criteria were the patients of all ages and both male and female gender, referred from Emergency and other inpatient departments of the hospital having wards for admission facility. Those who have active psychiatric presentations, and were referred with proper referral request to the psychiatry department and given informed written consent

The Exclusion criteria included unadmitted or Outpatient and legal cases and those who were discharged or left against medical advice. Those who did not give consent or approached without proper referral were also excluded.

The Record register is the study instrument that has been used to document information related to those referred cases in the Psychiatry department. The register had sections for the following details referring department, reason of referral, patient's age, and gender, primary or working physical diagnosis, Psychiatric diagnosis, advised treatment, and outcome of consult.

After ethical approval from the institute, the Record register was being maintained on daily basis by the on-call psychiatry res-

ident. The residents were being trained by the principal investigator in the group for this task before the study. The register was being duly checked regularly for its completeness and authenticity. The patients were enrolled in the study after written informed consent. They were assessed by the on-call resident under the supervision of a consultant by taking detailed psychiatric history and mental state examination. The background details of the patient regarding the patient's primary or working diagnosis, the reason for admission, ongoing treatment, investigations, and a detailed account of the reason for referral were sought from the available record from the admission file or ER slip and the referring doctor as well. The collateral information from reliable and available attendants was taken regarding the premorbid functioning and personality, personal, family, and past psychiatric illness, any trauma, ongoing stressors, or substance use. The possible Psychiatric diagnosis was made on the International Classification of Diseases, ICD-10 criteria. The patient's management was prioritized as per the demand of their health condition i.e., providing or continuing medical or surgical care with added psychiatric care when required and offered to follow up for further psychiatric help.

The data was analyzed using Statistical Package for Social Sciences (SPSS) version 19. The mean and standard deviation were calculated for age. While the frequency was calculated for gender and Clinical details such as primary or working diagnosis, psychiatric diagnosis, advised treatment, and outcome of consult. Post-stratification, the Chi-square test was applied and a p-value of <0.05 was considered significant. The Emergency cases were analyzed separately to compare the findings of frequency and pattern of referral with that of Inpatient departments such as reason of referral, primary or working diagnosis, Psychiatric diagnosis, advised treatment, and outcome.

RESULTS

This study was conducted to observe the frequency and to compare the pattern of psychiatric referrals between ER and the Inpatient departments of the Public sector hospital, in Karachi. At the end of six months, a record of a total of 281 patients was maintained in the register. Regarding demographic details of the study sample; we found both Male and Female patient referrals were almost equal. Most of the patients were from the young age group with mean age of 33.4±13.5 years. The Frequency of referral of patients for psychiatric consultation was lesser in the emergency department (ER), (n=112, 39.9%) than in the inpatient department (n=169, 60.1%). While among inpatient departments the most frequent referrals were from internal medicine (n= 57, 20.3%) followed by surgery (n= 30, 10.7%), gynaecology & obstetrics (n=17, 6%), neurology (n=16, 5.7%), and trauma (n=15, 5.3) (Table 1).

Reason of referral included altered or disorganized behavior (n=88, 31.3%) followed by unexplained somatic complaints (n=36, 12.8%) in IPD while in ER, it was unexplained somatic complaints (n=42, 14.9 followed by altered or disorganized behavior (n=38, 13.5%). The Chi-square test was applied to observe the statistically significant difference (p <0.05) between the pattern of psychiatric referrals in ER and IPD. The difference was significant among reason of referral (p=0.001), primary diagnosis (p=<0.001) and psychiatric diagnosis (p=<0.001). In the majority of referrals, the given presentation either couldn't satisfy any psychiatric diagnosis [IPD n=58, 20.6% and ER (n=27, 9.6%)] or diagnose as delirium secondary to the underlying physical condition [IPD (n= 37, 13.2%) and ER (n= 9, 3.2%)]. (Table 2). In our study, most of the referred patients were managed with either non-pharmacological interventions (counseling, informational care, etc) [IPD (n= 43, 15.3%) and ER (n= 12, 3.9%)] or advised further observation and investigation till the clarification of diagnosis because the primary diagnosis was uncertain at the time of

Table 1: Descriptive characteristics of demographic and other study variables

Variables		n (%)
Gender	Male	141 (50.2)
	Female	140 (49.8)
Age (Years) 33.4±13.5	<18	19 (6.8)
	18-25	82 (29.2)
	26-40	113 (40)
	41-60	54 (19.2)
	>60	13 (4.6)
Referring Departments	Emergency	112 (39.9)
	Inpatient	169 (60.1)
	Medicine	57 (20.3)
	Surgery	30 (10.7)
	Neurology	16 (5.7)
	ICU (Surgery & Medicine)	6 (2.1)
	Dermatology	10 (3.6)
	Gynae/OBS	17 (6.0)
	ENT/Eye	1 (0.4)
	Burns	5 (1.8)
	Trauma	15 (5.3)
	Others	12 (4.3)

Table 2: Pattern of Psychiatric referral

Pattern of referral		IPD (n=169)	ER (n=112)	p-Value
		n (%)	n (%)	
Reason of Referral	Altered/ Disorganized Behaviour	88 (31.3)	38 (13.5)	0.001
	Known Psychiatric Problem	25 (8.9)	10 (3.6)	
	Substance Use Disorder	14 (5)	10 (3.6)	
	Suicidality/Deliberate Self Harm	6 (2.1)	12 (4.3)	
	Unexplained Somatic Complains	36 (12.8)	42 (14.9)	
Primary Diagnosis	Medical Disorder	59 (21)	20 (7.1)	<0.001
	Surgical Disorder	78 (27.8)	5 (1.8)	
	Neurological Disorder	8 (2.8)	5 (1.8)	
	Other (Undiagnosed/ Unexplained)	24 (8.5)	82 (29.2)	
Psychiatric diagnosis	Somatoform Disorder	3 (1.1)	13 (4.6)	<0.001
	Depressive Disorder	21 (7.5)	11 (3.9)	
	Bipolar Disorder	6 (2.1)	5 (1.8)	
	Psychosis (Acute Psychosis/Schizophrenia)	8 (2.8)	11 (3.9)	
	Delirium	37 (13.2)	9 (3.2)	
	Substance Use Disorder	12 (4.3)	14 (5)	
	Organic Brain Syndrome	17 (6)	12 (4.3)	
	Unestablished or Other	58 (20.6)	27 (9.6)	
	Anxiety or Stress Related Disorder	7 (2.5)	10 (3.6)	
Advised treatment	Antidepressants	20 (7.1)	4 (1.4)	0.12
	Antipsychotics	24 (8.5)	17 (6)	
	Benzodiazepines	41 (14.6)	6 (2.1)	
	Treat Primary Cause or Observation/ Investigation	6 (2.1)	29 (10.3)	
	Nonpharmacological Intervention	43 (15.3)	11 (3.9)	
	Other (Symptomatic Treatment)	17 (6)	13 (4.6)	
	Polypharmacy	7 (2.5)	10 (3.6)	
	Mixed / ECT	5 (1.8)	10 (3.6)	
	Observation/ Investigation+Symptomatic Treatment	6 (2.1)	12 (4.3)	
Outcome	Followup	123 (43.8)	64 (22.8)	0.69
	Referred	31 (11)	17 (6)	
	Admission	4 (1.4)	13 (4.6)	
	Referral and Follow up	11 (3.9)	18 (6.4)	

psychiatric referral from ER (n= 82, 29.5%) and IPD (n= 24, 8.5%). Psychotropic medications were mostly prescribed to IPD referrals (n= 92, 32.7%) than those referred to ER (n= 37, 13.1%) (Table 2).

DISCUSSION

In this study, we have studied the frequency and compared the presentation of psychiatric referrals sent from ER and inpatient departments of civil hospital Karachi.

Both male and female subjects were equally distributed in our study sample, this finding might occur by chance because they were being referred by doctors and not directly seeking help for themselves. However, literature also contradicts this and found that help-seeking behavior for mental health issues is relatively more pronounced among females than males. Thompson et al[9] and Liddon et al[10] in their previous works have studied the determining factors behind such repulsive behavior of males for availing help from mental health services. The most common factors were the difference in coping style, reliance on layperson sources for help, and unavailability of compatible mental health resources for them as per their distinct needs with that of females. Hence by deference to help-seeking for mental health, they ultimately present with severe Psychiatric disorders and avail psychiatric admission through ER.[11,12] We found young age group was most affected by the psychiatric presentation. The available literature is also consistent with such findings. Mental health problems i.e, depression, self-harm, substance use, psychosis, and anxiety disorders are more prevalent in the young age group. It is the most crucial time of life when an individual can utilize one's maximum potential to lay the foundation of important facets of life; educational, occupational, and social that are nurtured accordingly in the later years. Hence if this time gets affected by the mental illness its repercussive effects may be felt persistently in the subsequent part of life especially if remained unattended, ignored, or mismanaged in the initial time.[13,14] Unfortunately in our community the situation is almost similar, Ranjan work[15] showed that even in ER of tertiary care hospitals proper referrals to Psychiatrists are not made and only overly pronounced psychiatric conditions like acute psychosis and dissociative disorders grab attention despite the presence of other psychiatric conditions such as depression, anxiety disorders, stress-related disorders. Suicide and DSH were also high in ER patients and most of them who were referred to psychiatrists were not properly informed about the purpose of psychiatric referrals hence they either didn't avail themselves or complied with the Psychiatrist's advice or concealed their true accounts possibly due to stigma.[16] Certain healthcare departments hardly care about psychiatric

issues in their patients such as in intensive care units. The ICU patients have significant Psychiatric morbidities but that doesn't get the attention of the doctors due to their only focus on medical disorders that ultimately compromise the quality of life of patients and prolong ICU stay.[17] The initial presentation of Physical syndromes with Psychiatric symptoms is not invariably uncommon in spite that labeling them as Psychiatric disorders and referring them for psychiatric admission is disputable. It causes undue burden to patients and unreasonably delays adequate care. The reason behind this is the lack of following the systematic approach of assessment including history, physical examination, and laboratory investigations, and drawing any conclusion based on its findings.[18] In our study, the presence of referred patients with unexplained somatic syndromes was high which could be possible because the reason that majority of patients from ER were being referred even before formal medical assessment. To endorse the fair practice of referral, screening must be ensured by psychiatric nurses or trained ER doctors at the emergency department.[19] The local system of interdepartmental referral is almost similar to neighboring lower and middle-income countries. The psychiatric referrals from other departments do not fulfill the population level requirement holistically. Ignorance and mislabeling of mental health issues have become a norm.[20] This study has mirrored a few findings of the previous work i.e., young patients have commonly referred for the reason of acutely altered or disturbed behavior and an unexplained somatic symptom, major referring department was internal medicine with common psychiatric diagnoses were depression, somatoform disorders, and delirium.[21] Since medicine is the most referring department for Psychiatric consultation there should be a collaborative approach to maximize continuity of care addressing medical and psychological issues.[22] Delirium is the most common psychiatric diagnosis in the referred cases either go undetected or get only the Psychiatrist's attention While its predetermining factors such as old age, polypharmacy, comorbidities, cognitive impairment, illness severity, and complexity need the attention of all attending doctors for collaborative approach as a prudent option.[23]

This study helps gather the comparative information of two main referring bodies ER and inpatient departments for psychiatric consultation. The studied population and duration of the study were reasonably significant about previously conducted studies in India.[3,4,22] It will be helpful in the development of local policies regarding liaison services as suggested by Chen et al[24] from his systemic review to ensure the availability of an expert team of doctors at both referring and consulting ends in the general health system, especially in tertiary care teaching hospitals. It will hold promising results in terms of improving patient outcomes and satisfaction and reducing economic burden.[25,26] Currently, the application of liaison work is heterogeneous and inconsistent even in developed high-income countries. But the deficiencies can be identified and a care plan as per provided resources can be built up with prospects of better funding, training, and culturally adaptive services.[27]

The stakeholders should acknowledge the public mental health care as the general health care and devise focused training and research programs to endorse this consultation and liaison system. This will bring a remarkable change in the health practice in multiple ways; patient satisfaction and cost-effective utilization of resources both for physical and psychological health. Training of general health professionals is instrumental to improve collaboration and sustenance of liaison of mental health services with general health. In that way, patients would avail timely and best possible care under one roof. Suicide and other life-threatening emergencies also need triaged protocol of assessment for effective management, better outcome, and rehabilitation of patients as an ongoing process without discontinuity in care. For future research perspectives, multi-center studies are recommended to formulate interventions to implement a more adaptive and collaborative management approach to liaise mental health services in our setting.

In this study, if certain information of referred cases such as socioeconomic status, substance use (tobacco, etc), and marital status were available it would further add robustness to the available data in figuring out the confounding effects of those variables on the study outcome.

CONCLUSION

It can be concluded from this descriptive study that the overall frequency of Psychiatric referrals is very low to the population demand and It was more from inpatient departments than that of ER. Most of the cases at both places didn't classify into a particular psychiatric diagnostic category and referred just because of apparent behavioral disturbance and unestablished medical diagnosis possibly due to ambiguity in clinical presentation. The development of a liaison and consultation system is essential to ensure systematic assessment of patients at initial presentation whether in ER or outpatient department, So that misdiagnosis and delay in the provision of quality care may be avoided that otherwise creating a burden both for hospital and patients.

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Author's Contribution

AH conceived the idea, helped in the acquisition of data and drafting of the manuscript. SQ, KD, IJ and TA helped in the data collection and helped in revising the manuscript for final approval. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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None

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

SILENT MYOCARDIAL ISCHEMIA AMONG ASYMPTOMATIC TYPE-2 DIABETIC PATIENTS

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ABSTRACT

Objective: To determine the frequency of silent myocardial ischemia among asymptomatic type-2 diabetes mellitus patients.

Methodology: This was a crossectional descriptive study conducted, after approval from the institutional ethical and research committee. A total of 90 asymptomatic type-2 diabetic patients were recruited for the present study. After informed written consent participants were subjected to a symptom-limited exercise tolerance test to detect the presence of silent myocardial ischemia. Descriptive statistics were applied to find frequencies and percentages for qualitative variables, and mean and standard deviation was used for quantitative variables. SPSS version22 was used for data analysis.

Results: Among 90 type-2 asymptomatic diabetic patients, the frequency of silent myocardial ischemia was 36.7% (n=33). The frequency of silent myocardial ischemia among males and females was 57.6% and 42.4% respectively. Frequency of silent myocardial ischemia was found significantly more among patients with family history of CAD (60.6% vs 39.4%; p=0.029), prolonged duration of diabetes (15.2% vs 22.2% vs 63.6%; p=0.026) and group of patients with older age (9% vs 39.4 vs 51.6%; p=0.034). With respect to hypertension, smoking, obesity, and gender didn't show statistically significant variation in the occurrence of silent myocardial ischemia.

Conclusion: More than one third patients of asymptomatic type-2 diabetes mellitus had silent myocardial ischemia. Those with a family history of CAD, prolonged duration of diabetes, and participants with older age were more at risk of underlying silent myocardial ischemia.

Keywords: Myocardial ischemia; Diabetes mellitus; Exercise test; Coronary artery disease.

INTRODUCTION

Worldwide prevalence of diabetes mellitus is on the rise affecting 8.5% of adults according to a report in 2014. A total of 90 to 95% of adults with diabetes suffer from type 2 Diabetes. Insulin resistance is the hallmark of Type-2 diabetes (T2DM) which increases the risk of vascular inflammation and atherogenesis exponentially, resulting in major micro and macrovascular complications like cardiovascular ischemia.[1]

Coronary artery disease (CAD) may remain asymptomatic, particularly in patients with T2DM, and these patients are less likely to survive the first attack of myocardial infarction making it imperative to screen such patients for the presence of clandestine ischemia or silent ischemia. Silent myocardial ischemia is the objective evidence of ischemia in patients without subjective evidence of ischemic symptoms.[2] Patients may demonstrate ischemic ECG changes, wall motion abnormalities on echocardiography, or myocardial perfusion defects on SPECT scan without having chest pain or other symptoms of cardiovascular ischemia. Silent myocardial ischemia could be one atypical presentation of ischemic heart diseases. The overall prevalence of cardiac diseases in patients suffering from type-2 DM is about 55%. The prevalence of cardiovascular ischemia and hence the risk of silent myocardial ischemia increases with increasing age.[3, 4]

In one study the prevalence of silent myocardial ischemia was 23%, using treadmill stress test for detection of silent myocardial ischemia, affecting males more as compared to females. The prevalence of silent myocardial ischemia was 22% in asymptomatic patients with type 2 diabetes (T2DM) on stress myocardial perfusion imaging in the Detection of Silent Myocardial Ischemia in Asymptomatic Diabetics (DIAD) study.[5]In another study 58% of the asymptomatic patients had abnormal stress SPECT scan. In a study conducted by Scognamiglio et al., 60% of diabetic patients who were asymptomatic had an abnormal finding on myocardial contrast echocardiography (MCE) and subsequent coronary angiography found to have CAD in

65% of the patients with an abnormal MCE.[5,6] In a similar study sheikh et al in Pakistan the prevalence of silent ischemia was 19% among the asymptomatic diabetics as compared to non-diabetics.[7]

The presence of silent myocardial ischemia is an independent risk for heightened cardiovascular morbidity and mortality in diabetics. This may in part be due to the delayed presentation, diagnosis, and treatment as compared to the non-diabetics who present early in the course of illness.[8] In a study conducted on individuals with sudden cardiac death 78% were found to have CAD and 71% had sudden cardiac death as the first presentation of their underlying fatal cardiovascular ischemia.[9]Silent myocardial infarction increases the odds of developing heart failure exponentially in patients with unnoticed underlying CAD.[10]

Given the ever-increasing prevalence of diabetes and the consequent silent myocardial ischemia, screening these patients with noninvasive stress testing is imperative to detect silent myocardial ischemia to avert the attendant risks and complications.[11] As mentioned, due to the heightened risk of cardiovascular complications and associated morbidity and mortality silent myocardial ischemia may be integrated into the risk prediction models. Diabetic patients particularly those with prolonged duration, poor glycemic control, associated comorbidities, and those with a family history of CAD need to be screened and treated aggressively to avoid the subsequent risk of cardiac morbidity andmortality.[12]

Different screening tools including a treadmill stress test, contrast myocardial echocardiography, exercise stress echocardiography, myocardial perfusion imaging (SPECT), etc have been used to detect silent myocardial ischemia.[5,6] Studies regarding the utility of different screening tools including an exercise stress test or exercise tolerance test in the detection of silent myocardial ischemia are sparse in our local setup. This study was done to get data regarding the prevalence of silent myocardial ischemia in our local setup using an exercise tolerance test. Furthermore, the exercise tolerance test is a cheap, easily available, and cost-effective tool to screen patients for myocardial ischemia as compared to other modalities.[13] This data will help us to draw future recommendations regarding screening diabetic patients for silent coronary artery disease.

METHODOLOGY

This was a crossectional descriptive study conducted at the cardiology department of Qazi Hussain Ahmad medical complex Nowshera, from 1st July 2020 to 30th January 2021. Type-2 diabetic patients (n=90) presenting to the out-patients department for clinical follow-up were recruited into the present study based on consecutive nonprobability sampling techniques. A total of 90 patients using 36.5% frequency of silent myocardial ischemia, the margin of error 10% and 95% confidence interval, using WHO sample size calculator were recruited into the present study Patients with an established diagnosis of T2DM of more than 5 years duration, with no history of CAD in the past, with no history of chest pain or angina pectoris, normal ECG and age 30 to 60 years were recruited into the present study.

Patients with a previous history of MI or CAD, abnormal baseline ECG, unable to undergo exercise stress test due to arthritis or disability or peripheral arterial disease, diabetes complicated by microvascular or macrovascular complications, coexisting COPD or Asthma, structural heart diseases and myocarditis, intake of medications causing ECG changes or affecting exercise stress test interpretation like digoxin or beta-blockers were excluded from the present study because these were the confounders and could affect study results.

Ethical approval for the study was taken from the institutional ethical and research board and informed written consent was taken from the patients after thoroughly discussing the aims and objective of the study, the benefits, and risks of the exercise stress test. Patients underwent thorough clinical assessment (history and examination), baseline ECG and Echocardiography were done, and blood samples were taken for glycemic assessment and baseline biochemistry to confirm the diagnosis and rule out confounders. Patients were subjected to symptom-limited exercise stress test with continuous hemodynamic monitoring, ECG recording, and assessment during and after exercise test into the recovery phase.ETT was considered positive if patients developed horizontal or downsloping ST-segment depressions or ST-segment elevations of ≥1mm on ECG or a drop in blood pressure of ≥ 10mmHg from baseline. The exercise stress test was considered inconclusive if patients didn't achieve 85% of the age-predicted maximum heart rate. Age predicted maximum heart rate was calculated as 220-age. Bruce protocol was followed during the exercise tolerance test (treadmill stress test). All the data including patient demographics and baseline characteristics were entered into a performed proforma.

Data analysis was done using SPSS version 22. Descriptive statistics were applied. Frequencies and percentages were computed for qualitative variables like silent myocardial ischemia, age categories, and gender, and mean and standard deviation were computed for quantitative variables like duration of diabetes, age, etc. Prevalence of silent myocardial ischemia was compared among the diabetic patients concerning age, gender, duration of diabetes, obesity, hypertension, smoking, and family history of CAD. For statistical significance, the Chi square test was applied and the p-value was computed, with a p-value less than 0.05 taken significant.

RESULTS

The mean age was 56 ± 1.26 years. A total of 40 (44.4%) were males and 50 (55.6%) were females. A total of 72 (80%) were married and 30 (30.33%) were smokers. Silent myocardial ischemia was found to be positive in 33 patients (36.7%) among type-2 diabetic patients, while 57(63.3%) did not have silent myocardial ischemia. A family history of coronary artery disease was positive among 41 patients (45.6%). The mean duration of type-2 DM was 14 ±3.77 years, 24 (26.6%) patients had diabetes of 5-10 years duration while 25 (27.8%) and 41(45.6%) patients had diabetes of 11-15years and 16-20 years duration respectively. The frequency of obesity was positive in 44(48.9%) with BMI>30kg/m2. A total of 72 (80%) were measured and 30 (33.3%) were smokers.

Table 1 describes that the prevalence of silent myocardial ischemia was compared with respect to age, gender, BMI, hypertension, family history of CAD, and duration of diabetes. Frequency of silent ischemia was significantly more among the group of patients of older age, prolonged duration of T2DM and family history of CAD. With respect to hypertension, smoking, obesity, and gender didn't show statistically significant variation in the occurrence of silent myocardial ischemia.

DISCUSSION

In the present study, the frequency of silent myocardial ischemia among 90 T2DM patients was 36.7% and there was a statistically increased frequency of silent myocardial ischemia among the group of patients with a family history of CAD (60.6% vs 39.4%; p=0.029) and those with prolonged duration of T2DM (15.2% vs 22.2% vs 63.6%; p=0.026).

In a similar observational study conducted on 338 patients, a treadmill test was used to screen for the presence of silent myocardial ischemia. The prevalence of silent myocardial ischemia was found to be 23%. The prevalence of silent myocardial ischemia was found to be more among males than among females. At age > 50 years, hypercholesterolemia, and hypertriglyceridemia were shown to be significant determinants of silent myocardial ischemia in asymptomatic diabetics.[4]

Another study used SPECT scan for the detection of silent myocardial ischemia among asymptomatic diabetics. The prevalence of stress-induced perfusion defects and hence silent myocardial ischemia was 37%. Insulin use, nephropathy, and neuropathy were found to be significant determinants of silent myocardial ischemia in asymptomatic diabetic patients(p<0.005). Hypercholesterolemia was not significantly associated with silent myocardial ischemia. Family history of CAD was found to be highly prevalent among asymptomatic diabetic patients (p=0.001).[14] In a study conducted by Sheikh et al, though there was a high proportion of patients suffering from silent myocardial ischemia among the diabetics as compared to the non-diabetics there was no statistically significant difference in the prevalence of silent myocardial ischemia among patients with and without T2DM.[7]

In another study conducted on 128 patients, silent myocardial ischemia could be

Table 1: Stratification of silent myocardial infarction with respect to baseline characteristics of patients. (n=90)

Variables		Silent myocardial ischemia		p-value
		Yes (n=33)	No (n=57)	
Age	30-40 Years	3 (9%)	19 (33.3%)	0.034
	41-50 Years	13 (39.4%)	18 (31.6%)	
	51-60 Years	17 (51.6%)	20 (35.1%)	
Gender	Male	19 (57.6%)	31 (54.4%)	0.769
	Female	14 (42.4%)	26 (45.6%)	
Duration of diabetes	5-10 Years	5 (15.2%)	20 (35.1%)	0.026
	11-15 Years	7 (22.2%)	17 (29.8%)	
	16-20 Years	21 (63.6%)	20 (35.1%)	
Obesity	Yes	20 (60.6%)	24 (42.1%)	0.091
	No	13 (39.4%)	33 (57.9%)	
Smoking	Yes	12 (36.4%)	17 (29.8%)	0.522
	No	21(63.6%)	40 (70.2%)	
Hypertension	Yes	11 (30.3%)	20 (35.1%)	0.629
	No	22 (69.7%)	37 (62.9%)	
Family history of CAD	Yes	20 (60.6%)	21 (36.8%)	0.029
	No	13 (39.4%)	36 (63.2%)	

detected in 19%–of the patients using an exercise stress test for the detection of silent myocardial ischemia in asymptomatic diabetic patients. Silent myocardial ischemia was significantly more prevalent in those with prolonged duration of diabetes and those with a family history of coronary artery disease.[15]

The prevalence of silent myocardial ischemia ranges from around 20% to 60% according to different studies, depending on the baseline characteristics of the participants[5,6]. Those patients who have a positive family history of coronary artery disease, prolonged duration of T2DM, associated comorbidities like hypertension, nephropathy, neuropathy, dyslipidemia, etc should undergo screening due to possibility of underlying silent myocardial ischemia, as is shown in our study.[16,17]

The exercise tolerance test is easily available and cost-effective modality for screening such patients which can be employed as compared to the other more costly and not so easily available modalities.

CONCLUSION

More than one third patients of asymptomatic type-2 diabetes mellitus had silent myocardial ischemia, using an exercise tolerance test for the detection of silent myocardial infarction. The frequency of silent myocardial ischemia was significantly more in those with prolonged duration of diabetes, older age group, and those with a positive family history of CAD.

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Author's Contribution

Al conceived the idea, collected the data, conducted a literature search and reviewed the paper. SBK contributed to the design, manuscript's intellectual content and final approval of the article. At the same time, Both authors agree to be responsible for all aspects of the work, including ensuring any questions about the work's accuracy or integrity are thoroughly examined and resolved.

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Authors declared no conflict of interest

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

OPTIMAL USE OF COMPUTED TOMOGRAPHY KIDNEY, URETER, AND BLADDER: REVIEW OF PATIENTS PRESENTING WITH ACUTE FLANK PAIN

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ABSTRACT

Objective: To describe detection and management of alternative pathology established by Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) in patients associated with acute flank pain.

Methodology: This retrospective review of 300 patients, presented with acute flank pain during one year from March 2019 to March 2020. All Computerized Tomographies were ordered from the Emergency Room after consultation with a urologist and subsequently reported by a consultant radiologist having a minimum of two years of experience in reporting non-contrast CT scans.

Results: A total of 300 patients presented to the emergency room with acute flank pain, out of whom 198 (66%) were male and 102 (34%) were female patients with a mean age of 35 years. The majority (n=249) of the patients were diagnosed with ureteric calculi and the remaining 51 patients (17%) came out to have alternative radiological findings. Eighteen (35.2%) patients were those who needed acute surgical management which included 13 female and 5 male patients. The remaining 33 (64.7%) patients were referred to specialized clinics as there was no emergency involved. The clinically important alternative findings were overall higher in the female cohort i.e., 25.5% versus 9.8% in male patients. Genitourinary findings were discovered in 11(21.5%) patients while 7 (13.7%) patients had non-genitourinary pathologies requiring emergency management.

Conclusion: CT-KUB is a useful tool for investigating acute flank pain aiding the decision-making process. The majority of the patients were diagnosed to have ureteric calculi with a significant number of alternative diagnoses mainly in the female population.

Keywords: Computed Tomography (CT); Kidney, Ureter, and Bladder (KUB); Flank Pain; Surgical Management.

INTRODUCTION

Acute flank pain is a common presentation to Emergency Room with a lifetime incidence of 12%.[1] Smith et al in 1995 first time suggested the vital role of Unenhanced Helical Computerized Tomography (UHCT) in the diagnosis of acute flank pain.[2] Unenhanced Helical Computerized Tomography (UHCT) is now the gold standard imaging modality for the diagnosis of ureteric and renal stones replacing Intravenous Urogram (Intravenous Urogram (IVU)) and ultrasonography.[3] Exposure to radiation is an important disadvantage of Unenhanced Helical Computerized Tomography (UHCT).[4] The difference between the radiation dose is 2.5 mSv for Intravenous Urogram (IVU) versus 4.7 mS for Unenhanced Helical Computerized Tomography (UHCT) performed for renal colic.[5] On the other hand, Unenhanced Helical Computerized Tomography (UHCT) has multiple advantages such as diagnostic accuracy, no contrast-related complications, rapidity, cost-effectiveness, operator independence and it can detect alternative abdominal pathologies. The purpose of this study was to assess the detection rate of alternative pathologies by Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) in patients presenting with acute flank pain.

METHODOLOGY

This retrospective analysis of 300 patients, presented with acute flank pain to the emergency department of Lady Reading Hospital for one year from March 2019 to March 2020. All these patients were advised non-contrast Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) done on 160 slicers, Toshiba Aquilion Prime™, and viewed on institutional Radiant Dicom viewer software. All CT scans were reported by a consultant radiologist having a minimum of two years experience in reporting Noncontrast CT scans. Alternative diagnoses were subdivided into clinically significant and insignificant. Clinically significant alternative

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diagnoses were those that required emergency management while clinically insignificant diagnoses required deferred treatment. The alternative pathologies were further subdivided into genitourinary and non-genitourinary for ease of assessment.

RESULTS

A total of 300 patients presented to the emergency room with acute flank pain, out of whom 198 (66%) were male and 102 (34%) were female patients with a mean age of 35 years. The majority (n=249) of the patients were diagnosed with ureteric calculi and the remaining 51 patients (17%) came out to have alternative radiological findings (Fig 1). Eighteen (35.2%) patients were those who needed acute surgical management which included 13 female and 5 male patients. The remaining 33 (64.7%) patients were referred to specialized clinics owing to the fact that there was no emergency involved. The clinically important alternative findings were overall higher in the female cohort i.e. 25.5% versus 9.8% in male patients. Genitourinary findings were discovered in 11 (21.5%) patients while 7 (13.7%) patients had non-genitourinary pathologies requiring emergency management.

DISCUSSION

Ureteric lithiasis is very common in our part of the world. These patients usually present with acute flank pain. Noncontrast Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) is the gold standard investigation for these stones with a sensitivity and specificity of 96-100 %.[6] Noncontrast Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) is rapidly performed, without needing iodinated contrast and bowel preparation.[6-9] The detection rate of alternative pathologies in this study is 17% which is comparable with a similar study by Nadir et al 2012 who detected alternative pathologies in 14 % of patients.[10] Sarofim et al 2016 diagnosed 33.5% with alternative pathologies but only 7% had clinically significant diagnoses requiring acute management. Likewise, in various other similar studies, the rate of detection of alternative pathologies ranged from 10 to 15%.[9,11] Urologists and Emergency physicians are more apt in diagnosing ureteric calculi on Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) in as many as 67 % of cases while the figures are quite lower among other specialists (43%). The detection rate of ureteric calculi is significantly high in our study (83%) considering the fact Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) is primarily advised by a consultant urologist. keeping in view our detection rate of alternative pathologies (17%), which is somewhat comparable to alternative diagnosis among urologists (12%) and ED physicians (18%).[12] In the female population, the detection rate of ureteric calculi is low while alternative pathologies are diagnosed more frequently compared to the male population.[13,14] Similar findings are discussed in our study which indicates that the female population needs more detailed evaluation before exposing them to radiation.

Ahmed et al emphasized that Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) should be advised to those patients who present with flank pain having had a prior history of urolithiasis, flank tenderness, dysuria, and/or microscopic hematuria. Whereas, the rest of the patients need to be first worked up with ultrasound and x-ray KUB only to be followed by Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) in case of inconclusive previous radiology.[9]

This study has its share of limitations, firstly in being a retrospective analysis followed by a lack of standardized protocol for Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) reporting. In addition, there were delays involved when it came to the timely release of reports as well. The final limitation was our inability to follow up with these patients with further imaging and biopsies to confirm our alternative pathologies.

CONCLUSION

Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) is a useful tool for investigating acute flank pain aiding the decision-making process. The majority of the patients were diagnosed to have ureteric calculi with a significant number of alternative diagnoses mainly in the female population. A concerted effort in terms of assessment is needed especially in female patients before ordering Computed Tomography (CT) Kidney, Ureter, and Bladder (KUB) to optimize its use in a clinical setting.

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Author's Contribution

MA helped in the write up of the manuscript. NH conceived the Idea and reviewed the manuscript. BA helped in the collection of the data. SB helped in the provision of data and review of the manuscript. SI contributed to the write up of the manuscript.Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

TUBERCULOSIS ABDOMEN: A REVIEW OF IMAGING FEATURES ON COMPUTED TOMOGRAPHY SCAN

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ABSTRACT

Objective: To evaluate the various imaging patterns of involvement of tuberculosis on CT scan abdomen.

Methodology: In this study, Computed Tomography scans abdomen of 25 patients with abdominal tuberculosis were retrospectively reviewed to determine the spectrum and involvement of tuberculosis in the abdomen. The study was conducted at the Radiology department of, Ghulam Muhammad Mahar Medical college hospital, Sukkur, Sindh Pakistan between Jan-Jun 2021.

Results: Lymphadenopathy was the most common feature in the CT scan study and was present in 20 (80%) cases involving mesenteric lymph nodes. Peripheral enhancing lymph nodes with central necrosis were the most common pattern of involvement in 10 (40%) cases. Peritoneal involvement was the second most common finding in 17 (68%) cases with ascites (wet peritonitis) seen in 11 (44%) and only ascites in 3 (12%) cases. Dry peritonitis (without ascites) was seen in 3 (12%) cases. Other findings included gastrointestinal involvement in 12 (48%) cases with the illeocecal region being the commonest site of involvement in 8 (66%) cases. The liver and spleen were the solid organ involvement in 3 (12%) cases.

Conclusion: Our study demonstrates the various imaging manifestations of abdominal tuberculosis on CT scans. It can be considered as a diagnostic tool in the diagnosis of TB abdomen along with clinical and laboratory data.

Keywords: Tuberculosis; Lymphadenopathy; Peritonitis; Illeocecal Thickening; Ascites.

INTRODUCTION

Tuberculosis remains the top infectious cause of mortality worldwide in the year 2020 and Pakistan is among the countries that account for two-thirds of total cases.[1] The most common site of extrapulmonary involvement of tuberculosis is the abdomen and worldwide represents about 5% of all cases of tuberculosis.[2,3]

Tuberculosis can involve many systems of the body and especially in the abdomen it involves the gastrointestinal tract, peritoneum, lymph nodes, and solid organs. There are many differentials like inflammatory bowel disease, malignancy or lymphoma to be considered on CT scan.[4,5] Various imaging modalities aid in the diagnosis of intra-abdominal tuberculosis including abdominal X-ray, Ultrasound, Barium Enema, and CT scan. But CT scan would be recommended for detection and assessment of various imaging manifestations like peritoneal, ascites, lymphadenopathy, and solid viscera involvement.[6]

Tuberculosis is a highly prevalent disease in developing countries like Pakistan. Because of its nonspecific and variable clinical presentation, this necessitates early diagnosis and appropriate treatment to reduce complications and mortality of this curable disease. Our study highlights the imaging features and importance of CT scans in the diagnostic workup of abdominal tuberculosis.

METHODOLOGY

The 25 patients with clinically proven abdominal tuberculosis referred for a contrast CT scan abdomen at the radiology department of, Ghulam Muhammad Mahar Medical College Hospital Sukkur, Sindh Pakistan between Jan-June 2021 were retrospectively reviewed. There were 18 females and 7 males, with the age range of 10-45 years. Patients' clinical and laboratory data and other records were also obtained and the diagnosis was made on both clinical grounds and CT scan findings. Patients with involvement in the genitourinary system and HIV positive were excluded from the study. As cases met all criteria of clinical diagnosis of abdominal tuberculosis, CT scans were reviewed by two experienced radiologists.

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RESULTS

CT scan abdomen analysis of 25 patients revealed lymphadenopathy was the most common feature involving mesenteric lymph nodes in 20 (80%) cases, other less common sites involved were peripancreatic and Para-aortic regions. Multiple enlarged lymph nodes with central hypodensity and peripheral enhancement were noted as the most common pattern in 10 (40%) cases, with solid enhancement in 8 (32%) cases and mixed type of enhancement in 2 (8%) cases.

Peritoneal involvement was seen in 17 (68%) cases most commonly seen as a smooth enhancement of the peritoneum. It was further categorized into wet type peritonitis seen as ascites along with peritoneal and mesenteric involvement in 11 (44%) and only ascites in 3 (12%) cases. Another is dry type peritonitis seen as a peritoneal thickening, mesenteric fat stranding, and omental involvement without ascites in 3 (12%) cases. Ascites were most commonly seen as a large volume of free intraperitoneal fluid and less commonly as a loculated collection of fluid.

Gastrointestinal involvement was seen in 12 (48%) cases. Circumferential and enhancing mural thickening was seen involving the illeocecal junction, terminal ileum, and cecum as the most common site of bowel loop involvement in 8 (66%) cases, other site was jejunum and ascending colon in two cases each only.

Solid viscera involvement was seen in 3 (12%) cases only as hepatic calcified granuloma in two cases and one case showed hypodense lesion involving the spleen along with GIT involvement. No other definite viscera involvement was noted.

Table 1: Computed Tomography (CT) Scan Findings and Involvement in Tuberculosis Abdomen

Computed Tomography Scan Findings	N=25	Percentage
Lymphadenopathy	20	80%
Peritoneal Involvement	17	68%
With Ascites (wet type)	14	56%
Without Ascites (dry type)	3	12%
GIT Involvement (illeocecal)	12	48%
Solid-Organ Involvements	3	12%

DISCUSSION

Tuberculosis of the abdomen results through ingestion of mycobacterium bacilli, like a squeal of reactivation of pulmonary TB, hematogenous or lymphatic spread from adjacent focus. It can affect GIT, lymph nodes, peritoneum, and solid organs in the abdomen.[7]

The most common manifestation of tuberculosis abdomen is lymphadenopathy and is seen in 25-93% of patients.[8] In contrast-enhanced CT scan, there are various specific features of lymph nodes involvement described by Zhang G et al[9] and Pombo et al[10] studies. In the early stage lymph nodes appears enlarged in size show homogenous enhancement, then central caseous necrosis occurs resulting in a central hypodense non-enhancing center with peripheral rim enhancement, the most common pattern in our study. Later on, enhancement becomes homogenous and shows matted adjacent lymph nodes. Finally, they appear as non-enhancing and become calcified. In our study, mesenteric lymphadenopathy was the commonest manifestation of abdominal tuberculosis in 80% of cases as previous studies showed lymphadenopathy in 50-77% of cases reported by Yilmaz T et al[11] and Hulnick DH et al.[12] Enlargement of lymph nodes demonstrates a size range of 12-40 mm in tuberculous lymphadenitis.[13]

The second common manifestation of abdominal tuberculosis is the peritoneal spread of the disease accounts for 30-58% of cases.[14]

Three different types of peritoneal involvement seen on CT scan depends on varying degree and stage of involvement of mesentery and omentum. The most common type is the wet type seen in 90% of cases manifested as free or loculated ascites, mostly high density (20-45HU) due to protein contents.[15-17] Mesenteric involvement is seen as the nodular infiltration and thickening of mesentery along with fat stranding and edema on the extent of involvement. Peritoneal involvement featured as smooth and uniform thickening of the peritoneum with few scattered nodules. The second type of peritoneal disease is fibrotic/ fixed type accounting for 60% of cases and characterized by Omental involvement seen as smudged thickening (most common type), caking and nodular.[18,19]

The third type is the dry plastic-type, seen in 10% of cases and characterized by multiple adhesions that causes matted bowel loops and caseous/ necrotic mesenteric lymph nodes. Peritoneal involvement was seen in 77% of patients followed by ascites in 52% of cases as observed by Sinan et al[20] and their results are in line with the current study which showed peritoneal involvement in 68% and ascites in 56% of cases.

The terminal ileum and cecum are the most common site of GIT involved in tuberculosis abdomen. Less common sites are ascending colon, jejunum, rectum, duodenum, and stomach.[21-23] On CT scan various imaging findings are manifested involving illeocecal region seen as mild wall thickening in an early stage with adjacent enlarged mesenteric lymphadenopathy. Eccentric mural thickening involving medial cecal wall and valve seen in later stages. In the advanced

stage, it shows conical and contracted cecum.[24,25] In our study illeocecal region was the most common site of involvement in 66% of cases compared to the study by Sinan et al[20] results which showed 50% cases.

Solid viscera involvement mainly involves the liver and spleen manifested as multiple or focal hypodense lesions/ abscesses on CT scan, later on, become calcified granuloma.[26,27] Our study showed viscera involvement in 12% of cases similar to the study by Rehman IU et al[28] which showed 14% of cases but without pancreatic involvement in our study.

Diagnostic imaging of intra-abdominal tuberculosis remains a challenge as it is a great mimicker of other common abdominal disorders. After the advent of multidetector CT SCAN, it offers a great advantage by recognizing the spectrum of imaging manifestations which will be helpful for both patient and clinician to facilitate timely diagnosis and management.

CONCLUSION

Our study concluded that the various imaging manifestations of abdominal tuberculosis on CT scans. It can be considered as a diagnostic tool in the diagnosis of TB abdomen along with clinical and laboratory data.

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Author's Contribution

RH helped in manuscript writing, collection of data and analysis of results. IM helped in collection of data and RH helped in writing of manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

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Authors declared no conflict of interest

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The data that support the findings of this study are available from the corresponding author upon reasonable request.

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SEXUAL DYSFUNCTION IN FEMALE PATIENTS WITH TYPE 2 DIABETES MELLITUS PRESENTING TO A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To determine the sexual dysfunction in female patients suffering from Type 2 diabetes mellitus presenting to the Endocrinology Department, Hayatabad Medical Complex Peshawar.

Methodology: A descriptive cross-sectional study was conducted on women suffering from Type 2 diabetes mellitus presenting to the Endocrinology Department, Hayatabad Medical Complex Peshawar. A validated questionnaire: the Female Sexual Function Index (FSFI) was administered to the study participants. Data analysis was performed by SPSS Version 25. A P-value of ≤0.05 was considered to be significant.

Results: One hundred and fifty female patients were enrolled. Mean±SD of age was 42.46±4.2 years. The mean FSFI score was 25. The frequency of Sexual Dysfunction was found to be 66.9%. Among these, 76.7% had issues with lubrication, 68.6% reported decreased libido, 78 arousal-related related complaints, 47.3% complains about dyspareunia, and 60.6% complained of abnormal orgasm and 61.6% reported decreased satisfaction.

Conclusion: The study revealed that sexual dysfunction is quite prevalent in our local population of diabetic women. Therefore, Physicians treating women having type 2 diabetes should have knowledge of possible sexual dysfunction in these patients and the problem should be addressed.

Keywords: Diabetes Mellitus; Sexual Dysfunction; Female Sexual Function Index

INTRODUCTION

Diabetes Mellitus (DM) is a chronic condition that affects millions of people around the world. The global diabetes prevalence in 2019 has been estimated to be 9.3% (463 million people) and this number is expected to increase by 25% in 2030 and by 51% in 2045.[1] Prevalence of T2DM in Pakistan is 11.77% with a female prevalence of 9.19%.[2] DM results in various psychological, medical, and sexual complications.[3]

Sexual Dysfunction (SD) in females is complicated and associated with various biopsychosocial risk factors.[4,5] WHO defines it as "The various ways in which a woman is unable to participate in a sexual relationship as she would wish."[6] The female sexual process consists of three stages namely desire, arousal, and orgasm.[7] Female SD includes lack or loss of libido, lack of sexual pleasure, vaginal dryness, issues with orgasm, and dyspareunia. Clinically female SD may be defined as "the persistent/recurring decrease in sexual desire or arousal, the difficulty/inability to achieve an orgasm, and/or the feeling of pain during sexual intercourse."[4,7]

DM leads to SD in males and females suffering from the disease.[8] The diagnosis and treatment of SD are relatively difficult in females as compared to males because of the intricacy of the female sexual process.[9,10] Although SD has been widely explored in diabetic male patients, there is limited data regarding female SD and diabetes mellitus and it is often an ignored health problem in diabetic women.[8] However, it affects physical and psychological health, thus affecting the overall well-being of these women and should be given more attention in medical practice and research.[11]

The global prevalence of SD in diabetic women ranges from 20-to 80%.[12,13] McCool and colleagues reported the prevalence of SD in women having T2DM to be 40.9%.[14] SD has been reported to increase with age.[15] High the frequency of SD in women having T2DM is reported in a systematic review and meta-analysis.[5]

However, there is limited data from the developing world including the Middle East and South Asia. A recent study from Iran (2017) reported that 78.7% of females with type 2 DM had sexual dysfunction.[17] A

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study from Ethiopia reported that 53.3% of diabetic women suffer from SD.[18] A South Indian study reported that SD is more common in women having less education and age of 40 or more.[19]

There is a lack of literature regarding the prevalence and characteristics of SD in our local population of female patients having T2DM. This study aimed to determine the prevalence of sexual dysfunction in females with T2DM and investigate the association between diabetes-related factors and SD.

METHODOLOGY

This cross-sectional study was conducted at the Endocrinology Department, Hayatabad Medical Complex Peshawar. after getting approval from the hospital research and ethical committee (IREB). One hundred and fifty women having T2DM were recruited for the study after getting written informed consent. The minimum sample size calculated was 132 women with T2DM, based on an Iranian study[18] however, 150 females were included. The sample was selected based on a consecutive non-probability from January 2021 to June 2021. Inclusion criteria included married females (18-55 years), in a stable relationship, and having type 2 diabetes for at least 5 years, while those with bilateral hystero-oophorectomy; current pregnancy; having sexual dysfunction in the husband; and having SD before developing DM, were excluded from the study.

Study participants were asked to complete a validated questionnaire, the Female Sexual Function Index (FSFI), while they were waiting for consultation. Privacy and confidentiality were assured.

Data regarding the DM duration, types of medicines (oral hypoglycemic agents, insulin), HbA1c, BMI, and hypertension were obtained from medical records.

Data were analyzed using SPSS version 25.0. Continuous variables like age, body mass index, and HbA1c were presented in terms of mean and standard deviation. Categorical variables like type of antidiabetic medications, hypertension, and sexual dysfunction were presented in the form of frequencies and percentages. Sexual dysfunction was stratified according to age, type of hypoglycemic agent, smoking, BMI, and HbA1c to see effect modification. Post-stratification, a chi-square test was applied. A p-value ≤ 0.05 was considered as significant.

RESULTS

The Mean standard deviation of age of the study participants was 42.46±4.2 years. The mean BMI was 29.46±3.52. The mean duration of DM was 8.42±4.6 years. Mean HbA1c was 7.64±1.64. The demographic characteristics of the study are given in Table 1.

The mean of the total FSFI score was 25.86. The frequency of Sexual Dysfunction was found to be 66.9%. Among these, 76.7% had issues with lubrication, 68.6% reported decreased libido, 78.7% had arousal-related complaints, 47.3% complained of dyspareunia, and 60.6% complained of abnormal orgasm and 61.6% reported decreased sexual satisfaction.

The study revealed that the association of sexual dysfunction with the age of the patients was not significant (p=0.16). The study also failed to show a significant association between DM duration and SD (p=0.12). Similarly, there was no statistically significant association between hypertension and SD (p=0.55) and type of treatment and SD (p=0.85). SD was reported in 89% of women having HbA1c less than 8.5 and 81% of the females having HbA1c greater than 8.5, However, this association was insignificant (p=0.089). SD frequency was higher (95%) in women who had primary or below primary education in comparison to ladies who had secondary or higher education (81%), however, this association was also insignificant (p=0.093). We also couldn't find a statistically significant association between SD and BMI (p=0.815). All these observations are summarized in the table. 1

DISCUSSION

SD is a crucial element of well-being in diabetic patients and various studies conclude that SD is common in diabetic females.[5,12,13,16,17] Our study also indicates that SD is very prevalent in these patients (66,9%). Afshari et al, concluded that 78.7% of Iranian women had sexual dysfunction.[16] Bak et al concluded that 68% of diabetic women had sexual dysfunction, and AlMogbel et al reported SD in 88.7% of women in Saudi Arabia.[18, 19] Esposito et al., found the frequency to be 53.4%.[20] A study in Jordan reported the prevalence to be 59.6%.[21] The differences in frequency of SD in various studies might be the result of the following factors: population studied, methods of SD assessment, age of the study subjects, and magnitude of the sample. Two other factors could also influence the prevalence rates: First, the FSFI cut-off score used (e.g., Esposito et al used 23 and we used 26.5 out of 36 in our study).[20] Second, the methods used for privacy and confidentiality of patients were different.

The study didn't show a significant association between glycemic control and the frequency of female SD (P=0.089). Afshari et al, Esposito et al, and Abu-Ali et al reported similar results.[5, 20, 21] However, this finding is contrary to the findings of Ziaei-Rad et al and Mazzilli et al.[22, 23]

This study didn't show any significant association between the age of the patients and sexual dysfunction. No statistically significant association was also found by

Table: 1. Patient characteristics and their association with SD.

Variable		Total Number n(%)	Sexual Dysfunction		p-Value
			No n (%)	Yes n (%)	
Age (years)	<40	39 (26%)	14 (35.9%)	25 (64.1%)	0.16
	40-49	111(74%)	38 (34.3%)	73 (65.7%)	
Diabetes Duration (years)	<5	45 (30%)	14 (31.2%)	31 (68.8%)	0.12
	5-10	66 (44%)	24 (36.4%)	42 (63.6%)	
	>10	39 (26%)	12 (30.8%)	27 (69.2%)	
Hypertension (years)	Yes	102 (68%)	33 (32.4%)	69 (67.6%)	0.55
	No	48 (32%)	16 (33.3%)	32 (66.7%)	
Type of Treatment	Oral hypoglycemics	91 (60.6%)	31 (34.1%)	60 (65.9%)	0.85
	Insulin	33 (22%)	12 (36.4%)	21 (63.6%)	
	Both	15 (10%)	5 (33.3%)	10 (66.7%)	
	Diet + Exercise	11 (7.3%)	4 (36.4%)	7 (63.6%)	
HbA1c	<7	32 (21%)	10 (31.3)	22 (68.7%)	0.089
	7- 8.5	79 (53%)	29 (36.8%)	50 (63.2%)	
	>8.5	39 (26%)	12 (30.8%)	27 (69.2%)	
Education	Primary or less	29 (19.3%)	9 (31%)	20 (69%)	0.093
	Elementary	81 (54%)	30 (37.1%)	51 (62.9%)	
	Higher	40 (26.6%)	12 (30%)	28 (70%)	
BMI	18-24	74 (49%)	25 (33.8)	49 (66.2%)	0.815
	25-29	57 (38%)	14 (35.8%)	43 (64.2%)	
	30-34	11(7%)	4 (36.4)	7 (63.6%)	
	≥35	08 (5%)	2 (25%)	6 (75%)	
Occupation	Employed	42 (28%)	13 (31%)	29 (69%)	0.823
	Housewife	108 (72%)	35 (32.5%)	73 (67.5%)	

Mazzilli R et al and Afshari et al.[23, 16]

Our study showed no significant association between sexual dysfunction and duration of DM similar to Ziaei-Rad et al and Esposito et al.[22, 20] On the contrary some studies revealed a significant association between SD and DM duration.

There was a gradual increase in sexual dysfunction with increasing weight, but the association was not significant. Elyasi et al. also reported similar finding.[24] On the contrary Esposito et al and El-Sakka et al reported a significant association between BMI and SD.[20, 25]

Our sample size was small due to which the results cannot be generalized to all diabetic women. Sexual behavior and functioning may be influenced by religious, cultural, and social norms. Other causes of sexual dysfunction may have been missed.

CONCLUSION

This study revealed that the frequency of SD among women having T2DMis quite high; however, glycemic control is not associated with sexual dysfunction in these patients. Therefore, physicians taking care of women with diabetes should take into account the high prevalence of SD in these women and they should be counseled and treated accordingly.

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Conflict of Interest

Author declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ROLE OF ULTRASONOGRAPHY IN EVALUATION OF ROTATOR CUFF INJURY

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ABSTRACT

Objective: To determine the role of ultrasonography in the evaluation of rotator cuff injury in patients with chronic shoulder pain.

Methodology: All the patients aged 30 to 80 years, suspected of rotator cuff injury were consecutively enrolled. These were then assessed by using ultrasound. Different patterns of injuries in subscapularis, supra- and infraspinatus, teres minor and bicep tendons were noted and labelled as partial or full thickness rotator cuff tears accordingly.

Results: The average age of the 96 patients was 54.72±7.46 years and average duration of pain recorded was 5.21±1.83 months. The majority of the patients were males (55-57.3%) and (41-42.3%) females. Right sided shoulder pain was observed in 64 (66.7%) cases. The most common finding was tendonitis seen in 43 (44.8%) of the cases with Subscapularis, partial thickness tear in supraspinatus involving 54 (56.3%) of the cases.

Conclusion: The study findings have shown that ultrasound can detect various shoulder injuries and the most common finding in Subscapularis injury was tendonitis and partial thickness tear in supraspinatus injury.

Keywords: Partial Thickness Tear; Full Thickness Tear; Tendonitis

INTRODUCTION

Chronic shoulder pain is one of the commonest symptoms seen among sports injuries, road traffic accidents and old age joint pains and rotator cuff injury is the major underlying cause. It adds to a great degree of morbidity, physical, social and mental stress to one's life.[1] Clinical examination can help but has a limited guidance towards the particular diagnosis and hence always there is a need for the aiding tool to reach the definitive diagnosis leading to management of the unwanted complications.[2,3]

There are number of diagnostic facilities with different degree of diagnostic accuracy, availability, cost and feasibility. The choice is made based on all these entities but not at the compromise of the diagnostic delay.[4] Ultrasonography (USG) and magnetic resonance imaging (MRI) are the most widely deployed ones where the latter has the highest degree of accuracy but it is expensive and not readily available.

Ultrasonography, with over 90% sensitivity and specificity, can help confirm the diagnosis in clinically or radiographically equivocal cases. It can be used as a focused examination providing rapid, real-time diagnosis, and treatment in desired clinical situations. The most commonly affected tendon is supraspinatus and investigations can help in diagnosing partial or full thickness tear and tendonitis.[5,6]

Since this is avery common finding in our set up in patients presenting with chronic should pain, this study was conducted to find out the role of ultrasonography in evaluation of rotator cuff injury.

METHODOLOGY

This cross-sectional study was conducted at Radiology Deparment of Pakistan Institute of Medical Sciences (PIMS), Islamabad-Pakistan from 1st July 2017 to 31st December 2017. A total of 96 cases were enrolled in this study, in which the calculated sample size was 86. The sample size was calculated using 95% confidence level with 6% error margin. The samples were collected by using non-probability sampling technique.

All the patients between 30 to 80 years of age presenting to the radiology department with chronic shoulder pain of at least 1 month or more were evaluated. The cases were included that had shoulder pain of 3 or more assessed on visual analogue scale (VAS). The

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cases that had any previous surgical intervention for repair or those with any prosthetic implant were excluded from this study.

The included cases underwent USG by using Toshiba Model Xario machine where they were looked for injuries in subscapularis, supra and infraspinatus, teres minor and biceps. Ultrasound of the opposite shoulder was also done to compare.

Statistical package for social sciences (SPSS) version 23.0 was used for data analysis. Mean and standard deviation were computed for quantitative variables like age, duration of symptoms and severity of pain. Frequency and percentages were computed for qualitative variables like gender and side of shoulder.

Table 1: Details of Ages, Duration and Severity of Pain (n=96)

Variables	Mean ± SD	Range
Age	54.72±7.46	40-74
Duration of Pain	5.21±1.83	3-12
Severity of Pain	4.0±0.82	3-6

Table 2: Gender and Site of Severity of Pain (n=96)

Variables		Number	Percentage
Gender	Male	55	57.3
	Female	41	42.7
Severity of Pain	Right	64	66.7
	Left	32	33.3

Table 3: Pattern of Lesions Detected on USG (n=96)

Type of Tendon	Partial Thickness Tear	Full Thickness Tear	Tendonitis	No lesion
Subscapularis	9 (9.4%)	5 (5.2%)	43 (44.8%)	39 (40.6%)
Supraspinatus	54 (56.3%)	9 (9.4%)	17 (17.7%)	16 (16.7%)
Infraspinatus	7 (7.3%)	2 (2.1%)	5 (5.2%)	82 (85.4%)
Teres minor	0 (0%)	0 (0%)	1 (1%)	95 (99%)
Biceps	0 (0%)	0 (0%)	1 (1%)	95 (99%)

RESULTS

The mean age of the participants was 54.72±7.46 years and mean duration of pain was 5.21±1.83 months as shown in table 1. There were 55 (57.3%) males and 41 (42.3%) females and 64 (66.7%) cases had right sided shoulder pain as in table 2. Table 3 reveals the types of lesions detected in various tendons of shoulder and most common findings was tendonitis seen in 43 (44.8%) of the cases with Subscapularis, partial thickness tear in supraspinatus involving 54 (56.3%) of the cases. The most common finding in Infraspinatus was also partial thickness tear seen in 7 (7.3%) of the cases and there was 1 case each with tendonitis in Teres minor and biceps.

DISCUSSION

The role of ultrasound in evaluation of the pattern of different findings in patients with chronic shoulder pain is significant. Shoulder pain is one of the occuring presentations to the orthopedic clinics and rheumatologist and is especially associated with disuse or sports injuries and are commonly referred to radiologists to look for the type and extent of the injuries. There is diversity of the injuries and its extent and can guide for further management. MRI is frequently advised for this, but limited facility at certain centers, increased cost and the long wait for appointments are the major concern to look for the other alternative with good results.[7,8]

In the present study, there was male dominance in terms of shoulder pain where there were 55 (57.3%) males and 41 (42.3%) females. This was similar to the study done by Singh AP et al where they also found male dominance and was seen in 21 vs 16 cases.[9]

Most number of lesions were observed in supraspinatus where around 83% of the cases were found to suffer from anyone and the most common one was partial thickness tear. These results were comparable to the result of the previous studies.[10-11] According to a study done by Zlarkin et al, supraspinatus tendon was affected in 80% of their cases.[11]

Singh et al also found this in highest number of cases and they also assessed the diagnostic accuracy of USG in rotator cuff injuries and they found that sensitivity of this was 78.72%, specificity was 84.6% and accuracy was 70% with a significant difference of 0.001.[9]

In the present study, the most common finding was tendonitis in 43 (44.8%) of the cases with Subscapularis which was the 2nd most tendon group involved and partial thickness tear was seen in supraspinatus involving 54 (56.3%) of the cases.[12-16] According to another study, Netam SBS et al, the most common tendon involved was supraspinatus.[12] Similar was seen by the studies of Vijayvargiya et al, Saraya et al and Khanduri et al.[14-16] The reason of highest number of this muscle involvement is its vulnerability due to anatomical position and mechanics.

Tendinitis was the 2nd most common finding seen after the partial thickness tear and so was seen from the results of the previous studies.[17-19]

CONCLUSION

This study concluded that the ultrasound can detect various shoulder injuries and the most common finding in Subscapularis injury

was tendonitis and partial thickness tear in supraspinatus injury.

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Author's Contribution

RN helped in data collection, study design, statistical analysis, proofreading, and manuscript writing. SFK conceived the idea and supervised the study. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

DEXMEDETOMIDINE ALONE OR WITH KETAMINE IN ADDITION TO ROUTINE FENTANYL ADMINISTRATION IN POST CARDIAC SURGERY PATIENTS: A RANDOMIZED CONTROLLED TRIAL

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ABSTRACT

Objective: To compare the effects of dexmedetomidine alone (DA) with dexmedetomidine plus ketamine (KD) combination in addition to routine fentanyl administration in post-cardiac surgery patients

Methodology: The trial was conducted at the Department of Anaesthesia and Critical Care, Chaudhary Pervaiz Elahi Institute of Cardiology Multan, from July 2020 to December 2020. A total of 40 patients planned for elective coronary artery bypass grafting (CABG) were randomized by lottery method for dexmedetomidine alone (Group DA, n=20) or dexmedetomidine plus Ketamine (Group KD, n=20) to maintain Ramsay sedation score ≥4 during assisted ventilation. All patients received fentanyl for postoperative analgesia. The mean arterial blood pressure, heart rate, sedation score, pain score, and mean extubation time were compared between two groups and analyzed by using SPSS version 23.

Results: Total fentanyl dose was 45.65 ± 8.23 µg in group KD and 146.01 ± 14.18 µg in group DA (p <0.001). The time of weaning was 344.65 ± 43.89 minutes and 446.60 ± 73.75 minutes in groups KD and DA, respectively (p <0.001). The time of Extubation was 389.90 ± 35.89 minutes and 535.30 ± 36.25 minutes in groups KD and DA, respectively (p <0.001). The ICU stay, heart rate, mean arterial pressure, Ramsay score, and non-verbal Pain score was comparable in both study groups (p>0.05).

Conclusion: Utilizing Ketamine plus dexmedetomidine for sedation post-Coronary Artery Bypass Graft (CABG) procedure gave a brief term of mechanical ventilation and early extubation with less fentanyl requirement than dexmedetomidine alone. Hemodynamic stability was present in both groups.

Keywords: Cardiac Surgery; Dexmedetomidine; Extubation; Hemodynamics; Ketamine; Fentanyl.

INTRODUCTION

Post-cardiac surgery complications influence morbidity and mortality among patients undergoing cardiac procedures. Patients undergoing cardiac surgeries need careful perioperative management to evade unwanted outcomes. Tachycardia is known to be a major cause of post coronary artery bypass graft (CABG) myocardial ischemia but can be managed with sedation and analgesia.[1]

Dexmedetomidine (DMM) is a highly specific α-2-adrenoreceptor agonist.[2] Sedative effects of DMM are better when compared to midazolam but in terms of respiratory and hemodynamic aspects, DMM is more effective than midazolam. DMM is not reported to suppress respiratory drive or reduce arterial oxygen saturation, that is why IV continuous sedation with DMM is not found to adversely affect ventilator weaning or extubation.[2] DMM does not produce unique EEG patterns of sleep resembling normal physiological sleep allowing convenient arousal.[3] Due to all these benefits, DMM is an established 1st line option for cooperative sedation management in the ICU.[4]

Ketamine is known to be a phencyclidine non-barbiturate derivate. Ketamine binds to N-methyl-d-aspartate and Σ opioid receptors producing dissociative anesthetic, analgesic, and amnesic effects while no major respiratory or cardiovascular suppression occurs with the use of ketamine. Ketamine obstructs endothelial nitric oxide synthesis that leads to positive inotropic actions as well as vasoconstriction which in turn preserves hemodynamic stability.[5]

Researchers have found that DMM efficiently and

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safely reduces ketamine-influenced hemodynamic pressor response and psychomimetic effect.[6] DMM is also anticipated to help in preventing tachycardia, hypertension, salivation, and the emergence effect linked with ketamine. On the other hand, ketamine might also help in preventing bradycardia and hypotension linked with DMM as has been reported in the past.[7] A scarcity of data exists comparing a combination of ketamine and DMM versus DMM alone so the present study was planned to compare the effects of DMM alone with DMM plus ketamine combination in addition to routine fentanyl administration in post-cardiac surgery patients

METHODOLOGY

This prospective randomized controlled trial was done at the anesthesia and critical care department of Chaudhary Pervaiz Elahi Institute of Cardiology, Multan Pakistan, from July 2020 to December 2020. Approval from the Institutional Ethical Committee was taken (CPEIC 153). This trial was also registered in the clinical trial registry (No: NCT05218161). Informed consent was sought from all patients.

A total of 40 hemodynamically stable patients having a normal or moderate impairment of left ventricular functioning (ejection fraction more than 40%) and who had elective CABG surgery adopting high-dose opioid anesthesia on mechanical ventilation were included and groups were made on randomized lottery method as explained in Figure 1. Pregnant women or those patients with neurological disorders, hepatic or renal impairment, or intraoperative hemodynamic instability were not excluded. Patients using vasopressors or inotropes were also excluded. The sample size calculation was done using a study by Mogahd et al.[8]

In all patients, sedation was done adopting DMM 1 µg per kg IV bolus, followed by 0.25 µg per kg per hour infusion with a combination of either ketamine or alone aiming for the attainment of Ramsay sedation score ≥4 during assisted ventilation. Group DMM alone (DA) received DMM alone as 1 µg per kg bolus that was followed by 0.3-0.7 µg per kg per min. Group DMM plus ketamine (KD) were given ketamine plus DMM 1.0 µg per kg over 20 min and then 0.2–0.7 µg per kg per hour. Ten percent variability in heart rate, blood pressure and mean arterial pressure from baseline was termed normal. Assessment of sedation was graded as per the Ramsay sedation scale.[8] Fentanyl was used as analgesia in all cases starting at 1 µg per kg per h infusion which was adjusted as per the adult nonverbal pain score.

Statistical Package for Social Sciences (SPSS) version 26.0 was used for data analysis. Numeric data were shown in mean and standard deviation (SD). Categorical variables were represented as frequency and percentage. The Chi-square test was employed for the comparison of the 2 groups considering $p \leq 0.05$ as significant.

RESULTS

There were 11 (55.0%) male and 9 (45.0%) female in group KD, whereas 10 (50.0%) males and 10 (50.0%) females in group DA ($p = 0.752$). Age, weight, and height were statistically similar in both study groups as shown in table-I ($p>0.05$). The total fentanyl dose was 45.65 ± 8.23 µg in group KD and 146.01 ± 14.18 µg in group DA ($p <0.001$). The time of weaning was 344.65 ± 43.89 minutes and 446.60 ± 73.75 minutes in groups KD and DA, respectively ($p <0.001$). The time of Extubation was 389.90 ± 35.89 minutes and 470.90 ± 66.65 minutes in groups KD and DA, respectively ($p <0.001$). The ICU stay heart rate and mean arterial pressure were not significantly different ($p>0.05$). There was no statistically significant difference in Ramsay score and non-verbal Pain score between both the groups (p-value 0.427 and 0.516, respectively). Table 1 is showing baseline and outcome data between study groups.

Table 1: Baseline and outcome data

Variable	Group KD* (n=20)	Group D+ (n=20)	p-value
Age (years)	53.65 ± 6.97	55.75 ± 5.65	0.302
Weight (kg)	65.35 ± 7.89	67.30 ± 7.82	0.438
Height (cm)	173.05 ± 10.75	171.60 ± 11.86	0.688
Gender (male/female)	11 / 9	10 / 10	0.752
Total fentanyl dose (µg)	45.65 ± 8.23	57.50 ± 9.73	<0.001
Time of weaning (min)	344.65 ± 43.89	446.60 ± 73.75	<0.001
Time of Extubation (min)	389.90 ± 35.89	470.90 ± 66.65	<0.001
ICU stay (hours)	45.45 ± 2.60	46.50 ± 2.42	0.194
Heart rate (bpm)	77.10 ± 2.61	77.95 ± 4.03	0.434
MAP (mmHg)	74.80 ± 6.63	77.35 ± 7.07	0.247
Ramsey score	3.35 ± 1.09	3.65± 1.27	0.427
Pain score	4.90 ± 2.05	4.45 ± 2.28	0.516

* Dexmedetomidine plus ketamine group
+ Dexmedetomidine group

DISCUSSION

In the cardiothoracic centers, Coronary Artery Bypass Graft (CABG) constitutes the highest percentage of cardiac surgeries. Elongated mechanical ventilation is one of the major causes of mortality and morbidity postoperatively.[9] The sedation type affects the period of mechanical ventilation after a surgical procedure. Factors such as the drug's onset of action, its side effects, and duration of recovery of cognitive functions after discontinuation of the drug help

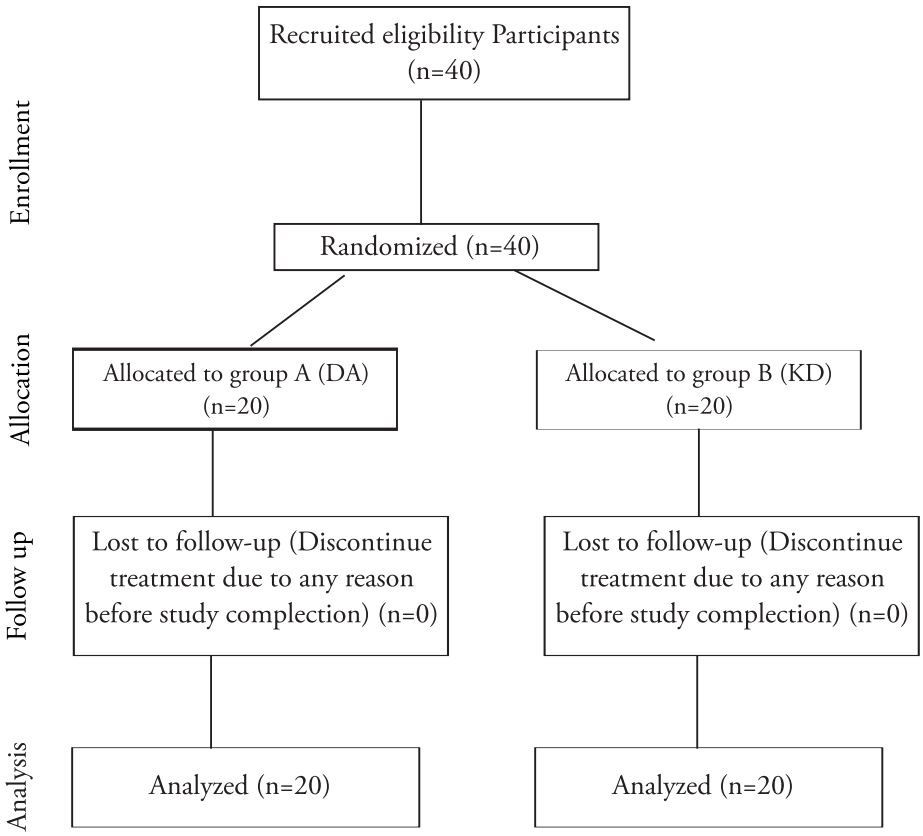

Figure 1: CONSORT diagram showing the flow of participants through each stage of the trial

choose the sedative.[10] If the duration of stay is reduced, it causes less cost of ICU and hospital stay due to short-acting sedatives and opioids, favouring the prompt tracheal extubation and reducing pain anxiety and cardiac instability from sympathetic output.[11] Pneumonia related to the ventilator, stress ulcer, GI bleeding, reduced cardiac output, and pulmonary barotrauma due to elongated mechanical ventilation enhances rates of morbidity and mortality.[12]

We noted that the combination of DMM and ketamine resulted in less duration of mechanical ventilation and earlier extubation than DMM alone. We did not note any significant differences in terms of sedation scores and hemodynamic aspects in both study groups. Early weaning and more limited term of mechanical ventilation with DMM might be added to the missing respiratory depressant impact, notwithstanding its better pain-relieving impact that diminished the aggregate sum of fentanyl utilization. Barletta and colleagues[13] found DMM to be an efficient sedative option among post-cardiac surgery cases as it was found to have no adverse influence on respiratory functioning and reduced sympathetic discharge which in turn decreased the duration of extubation and ICU stay. The utilization of DMM in post-cardiac surgery is becoming popular as it is found to influence a shorter duration of extubation in comparison to propofol.[13] The reasons may be different; it does not affect respiration as well as had sympatholytic activity thus it decreases the opiate dose.[13] Researchers comparing DMM versus propofol have revealed that patients using propofol-based regiments needed four times more morphine for sedation which shows that DMM is significantly more effective than propofol.[14-16] Contrary to this, a study found that DMM increases the use of morphine from 3.6% to 39.3% whereas ketorolac increased the use of morphine from 3.6-% to 25% among post-cardiac procedure cases.[17] In many previous studies, several beneficial effects of the combination of DMM ketamine as compared to alone DMM were found in earlier extubation and lesser time of the stay in ICU. James et al. revealed that the time of post-operative extubation, as well as the stay in ICU, was shorter with the sedation that was DMM-based.[10]

According to Stephan et al., DMM is an excellent option for permanent sedation with fewer spans of automated ventilation in ICU patients. Patients with DMM had a lesser extubation period and a lesser span of mechanical ventilation than propofol and midazolam. DMM did not affect the length of hospital stay or ICU stay. It causes hypotension and bradycardia more than midazolam but is equal to propofol.[18] In contrast, a previous study revealed that the extubation time in the patients receiving propofol and DMM was the same.[19] The propofol has a fast return of cognition while stopping the sedation because it has a short duration of action.[20] In 2011, the effect of DMM substitution was studied during the nationwide shortage of propofol in 70 patients that underwent CABG surgery. There were no differences between the DMM and propofol sedated patients for the time of extubation and opioid requirement in the first 12 hours after the admission to ICU.[21] Janette used the mixture of Ketamine and DMM throughout the procedure in children. The association of both drugs can avoid the limitations of these two drugs. There are several unfavourable adverse effects of DMM, such as hypotension, xerostomia, and bradycardia. During sedation, Ketamine, along with its reaction profile of tachycardia, enhanced secretion, and hypotension, appears to be the best option. It can abolish the unfavourable effects of DMM and vice versa. Besides, Ketamine has no respiratory depressant effect and powerful analgesic properties.[22] Our hemodynamic data,

including HR and MAP, disclosed an inconsequential change between the two groups. The ketamine use with the combination of DMM for the drowsiness remained linked by some prevalence of hemodynamic changes. Both produce hypotension, as well as DMM, produce bradycardia. During our study, no patient required chronotropic or inotropic medicine. The use of alone DMM in some studies produces unfavourable outcomes in hemodynamics.[23] The research of 300 sedated patients admitted to ICU after coronary bypass surgery revealed that DMM is related to more reduction in blood pressure than propofol.[14] In addition to this, in a meta-analysis, marked bradycardia was noticed while loading the dose and high maintenance dose that exceeds 0.7 µg/kg/h.[24] The reason is the selective nature of DMM. It may also be due to DMM being potent alpha 2 receptor agonist with dual vasomotor effects.

According to previous research, the hemodynamic effects of DMM in cardiac surgery are different; some results revealed that the incidence of hypotension was not worse, while others reported a significant reduction in BP that necessitates the vasopressors.[25] The sedation of ketamine and DMM combination with propofol was compared by Tosun et al. According to them, propofol-ketamine regularity was superior.[26] Researchers have discovered that the grouping of DMM as well as Ketamine produced the effective sedation for cardiac catheterization in the children without ventilator effects or marked hemodynamics infants.[27] Janette et al. revealed that the combination of Ketamine and DMM enhances favorable outcomes instead of using the DMM alone.[22]

CONCLUSION

Utilizing Ketamine plus dexmedetomidine for sedation post-CABG procedure gave a brief term of mechanical ventilation and early extubation with less fentanyl dose requirement compared to dexmedetomidine alone. Hemodynamic parameters were stable in both groups.

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Author's Contribution

SAR conceived the Idea and contributed to manuscript supervision. AF helped in manuscript writing and performed the statistical analysis. MIK helped in the collection of the data. KUF helped in the interpretation of data. AA and WA helped in finding the Literature. All authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

Grant Support and Financial Disclosure

None

Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

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ASSESSING CLINICAL OUTCOMES OF CASES OF BELL'S PALSY IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Objective: To assess the clinical outcomes of Bell's palsy in patients presenting to a tertiary care hospital

Methodology: The descriptive study was conducted at the Department of Neurology, Lady Reading Hospital from 1st June 2017 to 31st July 2018 on 113 patients using non-probability purposive sampling. Patients, received at the deaprtment of neurology or referred from the department of maxillofacial surgery and neurosurgery, between 16 and 80 years of age with idiopathic unilateral facial weakness were included in the study, after taking informed consent and approval from the ethical committee. The patient data regarding the demographic details, clinical features, risk factors, and follow-up outcomes were entered into a pre-designed proforma. The data was analyzed using SPSS version 20.

Results: Out of 156 patients who presented with bell's palsy, 113 fulfilled the inclusion and exclusion criteria. Majority were females (n=58, 51.32%) and had laterality on the right side (n= 64, 56.63%). High incidence was noted in patients in the age range 16-29 years (n=51, 45.13 %). The commonest risk factor was hypertension (n=9, 7.96%).

Conclusion: The common risk factors of Bell's palsy in our setup are hypertension, diabetes, and pregnancy in chronological order. There is strong evidence of benefits from the early use of corticosteroids.

Keywords: Bell's Palsy; Clinical Outcome; Risk Factor.

INTRODUCTION

Bell's palsy is the dysfunction of the facial nerve, which is one of the twelve cranial nerves. Its main function is to control the muscles of facial expression.[1] It is the commonest neurological disorder of the cranial nerves but the exact cause is still not determined. Bell's palsy presents as an acute, unilateral, partial, or complete facial paralysis (over 48 hr period). The annual incidence is about 15 to 30 cases per 100,000.[2,3] Bell's palsy accounts for about 80% of facial paralysis.[4] Early steroid therapy is the standard therapy to reduce morbidity although the literature offers little support for the use of antiviral agents. There is no consensus on having any benefit from surgical decompression of facial nerve.[5,6] Pregnancy, diabetes mellitus, elderly patients and hypothyroidism have a high incidence of bell's palsy.[3,7,8]

Due to dearth of literature on reporting the cases of Bell's palsy in our setup, this study was aimed to assess the clinical outcome and possible epidemiological patterns of Bell's palsy in Lady Reading Hospital Peshawar.

METHODOLOGY

The descriptive study was conducted at the Department of Neurology, Lady Reading Hospital from 1st June 2017 to 31st July 2018 on 113 patients using non-probability purposive sampling. Patients between 16 and 80 years of age with idiopathic unilateral facial weakness were included in the study, after taking informed consent and approval from the ethical committee.

Facial weakness due to stroke, otitis media, traumatic causes, herpes zoster infection, and identifiable causes of parotid or ear diseases were excluded.

After fulfilling the inclusion and exclusion criteria, informed consent was taken from the patients. Ethical approval was obtained from the Ethical Committee, Lady Reading Hospital, Peshawar. A pre-designed proforma was used for data collection of the patients which included the patient demographic details, clinical features, investigations, and follow-up outcomes after three months were recorded.

The whole data was entered into SPSS version 20. Statistics analysis was done. Mean, mode, standard deviation, percentage, and frequencies were calculated for numerical variables.

RESULTS

A total of 156 patients with facial weakness were assessed. Out of these, 43 patients were excluded. Among these 43, 26 had a stroke; 4 were from herpes zoster infection; 6 were having trauma-related facial weakness; 6 had confirmed ear or parotid gland pathology, and one patient was diagnosed with idiopathic intracranial hypertension.

The majority were females (n=58, 51.32%) while 55 patients were male with a ratio of 1.05:1. A total of 64 (56.63%) patients had a right-side facial weakness. There is no significant difference between males and females regarding the side of facial weakness. Recurrence was noted in 3% of the patients.

As shown in figure 1, a high incidence of bell's palsy was noted in the age range 16-29 years and the lowest incidence among 40 to 59 years of age. The elderly age group is resurgent.

In our study, the common risk factor for bell's palsy was hypertension 9 (7.96%), followed by diabetes (n=7, 6.19%) and pregnancy (n=2, 1.76%). The patients with diabetes and bell's palsy were in the age range of 50 to 80. Out of seven diabetics, two had uncontrolled diabetes with HbA1c of 11% or more.

Almost 73% of the patients started steroids within 3 days of symptoms onset. Out of the, 5% were started on sub-therapeutic dosage. The delay in initiating steroids therapy was due to a lack of seeking medical care from an authorized physician.

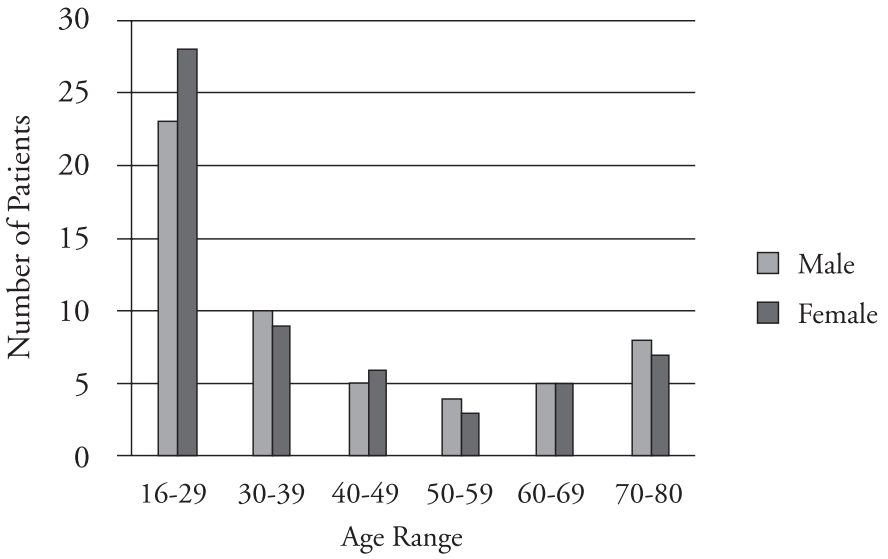

Figure 1: Frequency of Bell's Palsy according to gender and age

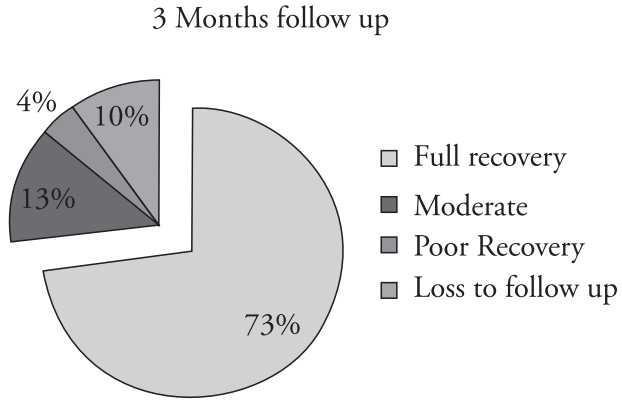

Figure 2: Follow up of patients with Bell's palsy (3 months)

There was a 7% drop out in follow-up in 3 weeks. Almost 83% of these patients showed signs of recovery in three weeks, while at 3 months follow up, a further 10% dropped out was recorded, almost 73% had a complete recovery. The details are shown in Figure 2.

DISCUSSION

Our study showed a slight preponderance of young females with bell's palsy which does correlate with the previous studies.[1, 2] 62% of our patients are in the age range 16-40 years, with 22% in elderly patients. Previous studies show a high incidence among the young age group with a resurgence in elderly patients.[1,2,9,10] Most of the studies show right face involvement in about 60% of the cases, which is also reflected in our study.[3,6,11]

There is a high incidence of bell's palsy in pregnancy, diabetes mellitus, and hypertension.[7,8] Two of our patients with bell's palsy were in the third trimester of pregnancy. Diabetes mellitus and hypertension were noted in our patients in the elderly age group which may have confounding factors.

The prognosis of bell's palsy is very good with complete recovery in 70 to 85% of the patients. Spontaneous recovery is also reported.[3-5] 73% of our patients had a complete recovery.[5] patients had poor recovery. Among the poor responders, one of the patients did not receive steroids whilst there

was a week delay in starting steroids in the second patient. Certain misconceptions and myths about the disease have been studied by Dr. Mansoor and Naveed's team leading to delayed presentation and hence the poor recovery.[12,13]

CONCLUSION

The common risk factors were hypertension, diabetes, and pregnancy in chronological order. Full recovery was seen in almost three fourth of the patients. There is strong evidence of benefits from early use of corticosteroids.

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Author's Contribution

MAH Contributed to conceptualization, methodology, and writing of the original draft. MIK and MIH referred the patients of Bells Palsy and contributed in the collection of data. AA and SA helped in data collection and drafting of manuscript. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

ADULT-ONSET STILL'S DISEASE: A FORGOTTEN MYTH

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ABSTRACT

Adult-onset Still's disease (AOSD), also known as Wissler-Fanconi syndrome is a rare systemic disorder. Symptoms usually include fever, joint pain, and rash. The diagnosis of ASOD is mostly clinical and excludes other possible causes. In this case report, a 25 years old gentleman, who in the recent past was diagnosed and treated with septic and reactive arthritis. He presented to us with a salmon-colored rash along with arthritis and was diagnosed as AOSD on the basis of clinical criteria, leukocytosis, raised inflammatory markers i.e., serum ferritin after the exclusion of other conditions.

Keywords: Still's Disease; Arthritis; Rash; Leukocytosis; Ferritin

INTRODUCTION

Adult-onset Still's disease is an autoinflammatory condition of unknown etiology, usually affecting people younger than 35 years of age. It is named after Sir George Frederic Still, a British physician who described the association of fever with childhood arthritis in 1896.[1] In 1971 title 'Adult Stills Disease' was used to describe a similar kind of arthritis in adults not fulfilling the criteria for classic rheumatoid arthritis. About 1-1.5 cases per 100,000-1,000,000 people suffer from this disease each year and it affects more women than men[2]. A high index of suspicion is needed for its diagnosis. Clinical and laboratory criteria are combined to overcome the diagnostic difficulties.

In this report, the authors present a case of arthritis which was later diagnosed as Adult-onset Still's disease.

CASE REPORT

A 25 years old, young, unmarried gentleman, student of masters, resident of Skardo presented with two weeks history of bilateral knee pain, high-grade fever (101-103^0 F), and sore throat. There was a history of anorexia and weight loss (undocumented.

He suffered from knee joint pain about 9 months ago. He had a fever too along with a rash on distilling parts of limbs. He was diagnosed, with septic arthritis in a local clinic, based on raised white blood cell count with neutrophilia. Knee joint aspiration was also done and was given antibiotics and analgesics with not much improvement. About 2 months ago symptoms reappeared. He was treated as a case of reactive arthritis although the patient gave no history of urethritis & conjunctivitis when asked retrospectively. Steroids and analgesics were given but he stopped treatment after a few days.

On examination he was clinically anemic but not jaundiced, having fever spikes of 102 ^{o}F. Their throw-away is mildly congested. A maculopapular rash was noticed on the trunk and limbs and face. Spleten was palpable two fingers below the left costal margin. Both knee joints were swollen and moderately tender. Slit-lamp examination of the eyes was normal.

Laboratory investigations revealed a total leucocyte count of 21,000/mm^3 with neutrophilic leukocytosis, Hemoglobin. 7.4 g/dl, mean corpuscular volume 91.1 fl. erythrocyte sedimentation rate was 84mm in 1st hour & C-reactive protein 70.4 mg/dl. Serum ferritin was more than 1000 ng/dl. antinuclear antibodies, Rheumatoid arthritis factor, and anti-CCP antibodies were negative. Aminotransferase and alkaline phosphatase were raised. The radiological examination was normal. Blood & urine culture reports were unremarkable. Ultrasound abdomen showed liver hemangioma and splenomegaly. Serum Alpha-fetoprotein level was normal. Hepatitis B & C were also negative. We also performed an upper gastrointestinal tract endoscopy that was normal.

A diagnosis of Adult-onset Still's disease was made based on clinical features and laboratory findings[3]. Yamaguchi's criteria were used (Table 2). Deltacortil and non-steroidal anti-inflammatory drugs (NSAIDS) were prescribed. After three weeks his arthritis and

Table 1a: Patient's laboratory values

Parameters	Normal Range	Results Before Treatment
Total Leukocyte Count	4-11X103/cmm	21.4 X103 /cmm
Hemoglobin	12.5-16.3 g/dl	7.4 g/dl
Mean Corpuscular Volume	73-96 fl	91.6 fl
Platelet count	152-358/cmm	616 X103 /cmm
Neutrophil	43.5-73.5	89.0 %
Lymphocytes	15.2-43.3	7.8 %
Alanine Transaminase	10-50 U/L	82 U/L
Alkaline Phosphatase	80-360 U/L	839 U/L
Lactate Dehydrogenase	240-480 U/L	873 U/L
Total Bilirubin	0.2-1.1 mg/dl	0.8 mg/dl
Urea	10-50 mg/dl	26 mg/dl
Creatinine	0.4-1.4 mg/dl	0.6 mg/dl
C-reactive protein	0.0-10.0 mg/dl	90.9 mg/dl
Serum Ferritin	Male 17.9 -464 ng/ml	> 1000 ng/dl
HBsAg by ELISA	< 1.0 negative 1.0 -5.0 borderline >5.0 positive	0.27
Anti Hepatitis C by ELISA	< 1.0 negative 1.0-5.0 borderline >5.0 positive	0.14
Dengue NS1 Antigen		Non -reactive
Dengue Anti bodies IgM		Non-reactive
Dengue Anti bodies IgG		Non-reactive
Covid-19 PCR		Negative
Alpha feto protein	0.0-8.8 ng/ml	>2.0 ng/ml
Anti CCP	> 5 IU/ml negative < 5 IU/ml positive	0.9 IU/ml
Serum TSH	0.4-4.50 mIU/l	1.94 mIU/l
Serum Free T4	8-24 pmol/l	19.10 pmol/l
RA Factor	< 8 IU/ml	Negative
ANA		Negative
Serum Uric Acid	160-430 µmol/l	223 µmol/l
Stool for Occult Blood		Negative

Table 1b: Patient's laboratory values

Parameters	Normal Range	Results After treatment
Total Leukocyte Count	4-11X103/cmm	11.9X103/cmm
Hemoglobin	12.5-16.3 g/dl	13.5 g/dl
Mean Corpuscular Colume	73-96 fl	96.8 fl
Platelet count	152-358/cmm	520X103/cmm
Neutrophil	43.5-73.5	78.5 %
Lymphocytes	15.2-43.3	15.4 %
Alanine Transaminase	10-50 U/L	23 U/L
Creatinine	0.4-1.4 mg/dl	0.5 mg/dl

fever subsided, his Total Leukocyte Count decreased, and he was able to mobilize his limbs.

DISCUSSION

AOSD is an autoinflammatory syndrome characterized by recurrent episodes of inflammation due to an abnormality of the innate immune system. This is different from an autoimmune disorder in which the immune system attacks healthy tissues of the body. The pathogenesis of AOSD remains unclear. Evidence of infectious and genetic etiology is suggested by researchers, but the root cause remains unknown[4]. AOSD is not a hereditary disease and does not run in families.

There is the activation of macrophages and neutrophils, followed by a cytokine storm. Interleukin-1, particularly IL-1 beta mediates cell response to inflammation. Interaction between Toll-like receptors and NOD-like receptors generate IL-1 beta, which is a potent pyrogen and facilitates neutrophilic proliferation and diapedesis into the inflamed tissues. Other cytokines involved are IL-6, IL-18, and tumor necrotic factor- alpha[3]. S100A8/A9 activates the Toll-like receptor 4 signaling pathway and may serve as a clinical marker for disease activity in AOSD[4]. Serum s TREM-1 levels are found to correlate with disease activity and are a potential predictor of the chronic course of AOSD[5].

Stills disease often goes unnoticed and is misdiagnosed. Symptoms include high-grade spiking fever, skin rash, myalgia, arthritis, and sore throat. The fever is typically greater than 102°F. The rash is salmon-pink in color, evanescent, and mostly affects the chest trunk, and thighs. Arthritis affects the knee, wrist, ankle, elbow, and hip joints usually[6]. Other symptoms are abdominal pain, loss of appetite, nausea, chest pain, and weight loss. Our patient had recurrent episodes of arthritis, fever, and rash which were overlooked initially. Rash was noticed with fever spikes.

There is no specific test for AOSD. Typically, there is leucocytosis, especially neutrophilia. CRP and ESR levels are raised. Serum ferritin level is raised disproportionately. Oth-

Table 2: Diagnostic criteria of Still's disease

YAMAGUCHI's CRITERIA
Major criteria
Fever of at least 39 0C lasting at least one week
Arthralgia or arthritis lasting two weeks or longer
Characteristic skin rash (non- pruritic macular or maculopapular salmon-color) over trunk or extremities during febrile episodes
Leucocytosis (10,000/ml or greater) with at least 80% granulocytes
Minor criteria
Sore throat
Lymphadenopathy
Hepatomegaly or splenomegaly
Elevation in liver enzymes concentration
Negative RA factor and ANA

Figure 1: Maculopapular rash

er tests are done to exclude immunological diseases such as ANA, and RA factor[6]. In our patient septic screen was negative, and a Chest x-ray was normal. High TLC and platelet count, and anemia with disproportionally high ferritin levels lead us to think about an inflammatory process.

The Yamaguchi criteria are the most widely used criteria[7]. For the diagnosis of AOSD, it is necessary to fulfill at least five criteria, including two major criteria. Our patient full filled all four major criteria and four minor criteria.

No specific treatment has proven consistently effective in all patients. NSAIDs are used as initial treatment. Corticosteroids are used in patients not responding to NSAIDs and also to treat complications like pericarditis, serositis, and anemia. DMARDS like methotrexate are used as anti-inflammatory and steroid-sparing drugs. Anakinra, an IL-1 blocker is effective in remitting the manifestations of Still's disease and reducing the dose of steroids[8]. Infliximab and Etanercept have shown promise in small studies. Tocilizumab blocks IL-6 and is used to treat systemic juvenile idiopathic arthritis as well as AOSD. Canakinumab, an IL-1 beta blocker is recommended if corticosteroids and methotrexate have not been successful in AOSD[9] and is also approved by FDA in 2020.

About two-thirds of patients go into remission after one or several clinical episodes of AOSD. One-third may develop chronic disease. Most of these patients do well after adopting a healthy lifestyle. Some may develop complications like serositis and pericarditis. Macrophage activation syndrome causes an extreme proliferation of macrophages and is associated with decreased survival[10].

CONCLUSION

Still's disease is a diagnosis of exclusion. In order to prevent complications and improve the prognosis, a detailed history and physical examination along with a multidisciplinary evaluation is needed.

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Author's Contribution

AUN received the case and helped in the write up of the manuscript. SZ, I and AG helped in managing the case and contributed to writing of the manuscript and bibliography. Authors agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Conflict of Interest

Authors declared no conflict of interest

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Data Sharing Statement

The data that support the findings of this study are available from the corresponding author upon reasonable request.

INSTRUCTIONS TO AUTHORS

The "JOURNAL OF POSTGRADUATE MEDICAL INSTITUTE (JPMI), is the official journal of Postgraduate Medical Institute (PGMI), Peshawar that started its publication in 1986. It is a quarterly, peer reviewed biomedical journal and follows the uniform requirements for manuscripts (URM) submitted to biomedical journals as approved by the International Committee of Medical Journal Editors (ICMJE) duly revised in 1997 and published in N Eng J Med. 1997;336:309-15. Detailed information about updated URM can be downloaded from www.icmje.org. JPMI is a member of the Committee on Publication Ethics (COPE) and follows the COPE guidelines regarding publication ethics and malpractices.

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Describe your selection of the observational or experimental subjects (patients or laboratory animals, including controls) clearly. Identify the age, gender, and other important characteristics of the subjects. There should be clarity about how and why a study was done in a particular way. For example, authors should explain why only subjects of certain ages were included or why women were excluded. Authors should avoid terms such as "race," which lacks precise biological meaning, and use alternative descriptors such as "ethnicity" or "ethnic group" instead. Authors should specify carefully what the descriptors mean, and tell exactly how the data were collected (for example, what terms were used in survey forms, whether the data was self-reported or assigned by others, etc.). Identify the methods, apparatus (give the manufacturer's name and address in parentheses), and procedures in sufficient detail to allow other workers to reproduce the results. Give references to established methods, including statistical methods; provide references and brief descriptions for methods that have been published but are not well known; describe new or substantially modified methods, give reasons for using them, and evaluate their limitations. Identify precisely all drugs and chemicals used, including generic name(s), dose(s), and route(s) of administration. Reports of randomized clinical trials should present information on all major study elements, including the protocol (study population, interventions or exposures, outcomes, and the rationale for statistical analysis), assignment of interventions (methods of randomization, concealment of allocation to treatment groups), and the method of masking (blinding). Authors submitting review manuscripts should include a section describing the methods used for locating, selecting, extracting, and synthesizing data. These methods should also be summarized in the abstract.

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When reporting experiments on human subjects, indicate whether the procedures followed were in accordance with the ethical standards of the responsible committee on human experimentation (institutional or regional) and with the Helsinki Declaration of 1975 (revised in 1983). Do not use patients' names, initials, or hospital numbers. When reporting experiments on animals, indicate whether the institution's or a national research council's guide for, or any national law on, the care and use of laboratory animals was followed. Submit the copy of the approval certificate from Institutional review board (IRB)/ research ethical committees while submitting the manuscript.

❑ Statistics

Describe statistical methods with enough detail to enable a knowledgeable reader with access to the original data to verify the reported results. When possible, quantify findings and present them with appropriate indicators of measurement error or uncertainty (such as confidence intervals). Avoid relying solely on statistical hypothesis testing, such as the use of p-values, which may fail to convey important quantitative information. Discuss the eligibility of experimental subjects. Give details about randomization. Describe the methods for and success of any blinding of observations. Report the complications of treatment, if any. Give numbers of observations and report losses to observation (such as dropouts from a clinical trial). References for the design of the study and statistical methods should be to standard works when possible rather than to papers in which the designs or methods were reported. Specify any computer software used. Put a general description of methods in the Methodology section. When data are summarized in the Results section, specify the statistical methods used to analyze them. Restrict tables and figures/ illustrations to those needed to explain the argument of the paper and to assess its support. Use graphs as an alternative to tables with many entries; do not duplicate data in graphs and tables. Avoid nontechnical uses of technical terms in statistics.

❑ Results

Present your results in logical sequence in the text, tables, and figures/ illustrations. Do not repeat in the text all the data in the tables or figures/ illustrations. Emphasize or summarize only important observations.

❑ Discussion

Emphasize the new and important aspects of the study and the conclusions that follow from them. Do not repeat data or other material given in the Introduction or the Results section in detail. Include the implications of the findings and their limitations, including implications for future research in the Discussion section. Relate the observations to other relevant studies. Link the conclusions with the goals of the study but avoid unqualified statements and conclusions not completely supported by the data. In particular, authors should avoid making statements on economic benefits and costs unless their

manuscript includes economic data and analysis. Avoid claiming priority and alluding to work that has not been completed. State new hypothesis when warranted, but clearly label them as such. Recommendations, when appropriate, may be included.

❑ Acknowledgments

List all contributors who do not meet the criteria for authorship, such as a person who provided purely technical help, writing assistance, or a department chair who provided only general support. Financial and material support should also be acknowledged. Groups of persons who have contributed materially to the paper but whose contributions do not justify authorship may be listed under a heading such as "clinical investigators" or "participating investigators," and their function or contribution should be described for example, "served as scientific advisors," "critically reviewed the study proposal," "collected data," or "provided and cared for study patients." Because readers may infer their endorsement of the data and conclusions, all persons must have given written permission to be acknowledged.

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References should be numbered consecutively in the order in which they are first mentioned in the text. Identify references in text, tables, and figures/ illustrations by Arabic numerals in parentheses. References cited only in tables or figures/ illustrations should be numbered in accordance with the sequence established by the first identification in the text of the particular table or figure/ illustration. Use the style of the examples below, which are based on the formats used by the NLM in Index Medicus. The titles of journals should be abbreviated according to the style used in Index Medicus. Consult the List of Journals Indexed in Index Medicus, published annually as a separate publication by the library and as a list in the January issue of Index Medicus. Avoid using abstracts as references. References to papers accepted but not yet published should be designated as "in press" or "forthcoming"; authors should obtain written permission to cite such papers as well as verification that they have been accepted for publication. Information from manuscripts submitted but not accepted should be cited in the text as "unpublished observations" with written permission from the source. Avoid citing a "personal communication" unless it provides essential information not available from a public source, in which case the name of the person and date of communication should be cited in parentheses in the text. For scientific articles, authors should obtain written permission and confirmation of accuracy from the source of a personal communication. The references must be verified by the author(s) against the original documents. The Uniform Requirements style (the Vancouver style) is based largely on an ANSI standard style adapted by the NLM for its databases. Notes have been added where Vancouver style differs from the style now used by NLM.

Articles in Journals

Standard journal article

Upto 6 authors: Irfan M, Abdullah AS, Sethi MR, Saleem U, Zeeshan MF, Haq NU. Assessment of personality disorders in students appearing for medical school entrance examination. J Pak Med Assoc. 2018;68(12):1763-8.

More than six authors: List the first six authors followed by et al. Parkin DM, Clayton D, Black RJ, Masuyer E, Friedl HP, Ivanov E, et al. Childhood leukaemia in Europe after Chernobyl: 5 year follow-up. Br J Cancer. 1996;73:1006-12.

Organization as author

The Cardiac Society of Australia and New Zealand. Clinical exercise stress testing. Safety and performance guidelines. Med J Aust. 1996;164:282-4.

No author given

Cancer in South Africa [editorial]. S Afr Med J. 1994;84:15.

Article not in English

(Note: NLM translates the title to English, encloses the translation in square brackets, and adds an abbreviated language designator.) Ryder TE, Haukeland EA, Solhaug JH. Bilateral infrapatellar seneruptur hostidligere frisk kvinne. Tidsskr Nor Laegeforen. 1996;116:41-2.

Volume with supplement

Shen HM, Zhang QF. Risk assessment of nickel carcinogenicity and occupational lung cancer. Environ Health Perspect. 1994;102 Suppl 1:275-82.

Issue with supplement

Payne DK, Sullivan MD, Massie MJ. Women's psychological reactions to breast cancer. Semin Oncol. 1996;23 (1 Suppl 2):89-97.

Volume with part

Ozben T, Nacitarhan S, Tuncer N. Plasma and urine sialic acid in non-insulin dependent diabetes mellitus. Ann Clin Biochem. 1995;32(Pt 3):303-6.

Issue with part

Poole GH, Mills SM. One hundred consecutive cases of flap lacerations of the leg in ageing patients. N Z Med J. 1994;107 (986 Pt 1):377-8.

Issue with no volume

Turan I, Wredmark T, Fellander-Tsai L. Arthroscopic ankle arthrodesis in rheumatoid arthritis. Clin Orthop. 1995;(320):110-4.

No issue or volume

Browell DA, Lennard TW. Immunologic status of the cancer patient and the effects of blood transfusion on antitumor responses. Curr Opin Gen Surg. 1993:325-33.

Pagination in Roman numerals

Fisher GA, Sikic BI. Drug resistance in clinical oncology and hematology. Introduction. He-

matol Oncol Clin North Am. 1995 Apr;9(2):xi-xii.

Type of article indicated as needed

Enzensberger W, Fischer PA. Metronome in Parkinson's disease [letter]. Lancet 1996;347:1337. Clement J, De Bock R. Hematological complications of hantavirus nephropathy (HVN) [abstract]. Kidney Int. 1992;42:1285.

Article containing retraction

Garey CE, Schwarzman AL, Rise ML, Seyfried TN. Ceruloplasmin gene defect associated with epilepsy in EL mice [retraction of Garey CE, Schwarzman AL, Rise ML, Seyfried TN. In: Nat Genet 1994;6:426-31]. Nat Genet. 1995;11:104.

Article retracted

Liou GI, Wang M, Matragoon S. Precocious IRBP gene expression during mouse development [retracted in Invest Ophthalmol Vis Sci 1994; 35: 3127]. Invest Ophthalmol Vis Sci. 1994;35:1083-8.

Article with published erratum

Hamlin JA, Kahn AM. Herniography in symptomatic patients following inguinal hernia repair [published erratum appears in West J Med 1995;162:278]. West J Med. 1995;162:28-31.

Books and Other Monographs

(Note: Previous Vancouver style incorrectly had a comma rather than a semicolon between the publisher and the date.)

Personal author(s)

Ringsven MK, Bond D. Gerontology and leadership skills for nurses. 2nd ed. Albany (NY): Delmar Publishers; 1996.

Editor(s), compiler(s) as author

Norman IJ, Redfern SJ, editors. Mental health care for elderly people. New York: Churchill Livingstone; 1996.

Organization as author and publisher

Institute of Medicine (US). Looking at the future of the Medicaid program. Washington: The Institute; 1992.

Chapter in a book

(Note: Previous Vancouver style had a colon rather than a p before pagination.) Phillips SJ, Whisnant JP. Hypertension and stroke. In: Laragh JH, Brenner BM, editors. Hypertension: pathophysiology, diagnosis, and management. 2nd ed. New York: Raven Press; 1995. p. 465-78.

Conference proceedings

Kimura J, Shibasaki H, editors. Recent advances in clinical neurophysiology. Proceedings of the 10th International Congress of EMG and Clinical Neurophysiology; 1995 Oct 15-19; Kyoto, Japan. Amsterdam: Elsevier; 1996.

Conference paper

Bengtsson S, Solheim BG. Enforcement of data protection, privacy and security in medical informatics. In: Lun KC, Degoulet P, Piemme TE, Rienhoff O, editors. MEDINFO 92. Proceedings of the 7th World Congress on Medical Informatics; 1992 Sep 6-10; Geneva, Switzerland. Amsterdam: North-Holland; 1992. p. 1561-5.

Scientific or technical report

Issued by funding/sponsoring agency: Smith P, Golladay K. Payment for durable medical equipment billed during skilled nursing facility stays. Final report. Dallas (TX): Dept. of Health and Human Services (US), Office of Evaluation and Inspections; 1994 Oct. Report No.: HHSIGOEI69200860. Issued by performing agency: Field MJ, Tranquada RE, Feasley JC, editors. Health services research: work force and educational issues. Washington: National Academy Press; 1995. Contract No.: AHCPR282942008. Sponsored by the Agency for Health Care Policy and Research.

Dissertation

Kaplan SJ. Post-hospital home health care: the elderly's access and utilization [dissertation]. St. Louis (MO): Washington Univ.; 1995.

Patent

Larsen CE, Trip R, Johnson CR, inventors; Novoste Corporation, assignee. Methods for procedures related to the electrophysiology of the heart. US patent 5,529,067. 1995 Jun 25.

Unpublished Material

In press

(Note: NLM prefers "forthcoming" because not all items will be printed.) Leshner AI. Molecular mechanisms of cocaine addiction. N Engl J Med. In press 1996.

Electronic Material

Journal article in electronic format

Morse SS. Factors in the emergence of infectious diseases. Emerg Infect Dis [serial online] 1995 Jan-Mar [cited 1996 Jun 5];1(1):[24 screens]. Available from: URL: http://www.cdc.gov/ ncidod/EID/eid.htm

Monograph in electronic format

CDI, clinical dermatology illustrated [monograph on CD-ROM]. Reeves JRT, Maibach H. CMEA Multimedia Group, producers. 2nd ed. Version 2.0. San Diego: CMEA; 1995.

Computer file

Hemodynamics III: the ups and downs of hemodynamics [computer program]. Version 2.2. Orlando (FL): Computerized Educational Systems; 1993.

❑ Tables and Figures/ Illustrations

Tables and figures/ illustration should be self-explanatory and numbered in the order of their mention in the text. Provide a brief title for each. Type each double-spaced on a separate page. Abbreviations should be defined in a double-spaced footnote at the

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Authors should declare any potential conflict of interest and any financial support for the study may be disclosed as well.

At the end of the text, under a subheading "Conflict of interest", all authors must disclose any financial and personal relationships with other people or organizations that could inappropriately influence (bias) their work. Examples of financial conflicts include employment, consultancies, stock ownership, honoraria, paid expert testimony, patents or patent applications, and travel grants, all within 3 years of beginning the work submitted. Authors should state it clearly if there are no conflicts of interest.

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❑ Authorship

All persons designated as authors should qualify for authorship. An "author" is generally considered to be someone who has made substantive intellectual contributions to a published study. To qualify as an author, one should:

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2) has been involved in drafting the manuscript or revising it critically for important intellectual content;

3) has given final approval of the version to be published; and

4) agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved.

Each author should have participated sufficiently in the work to take public responsibility for appropriate portions of the content. Acquisition of funding, collection of data, or general supervision of the research group, alone, does not justify authorship.

❑ Systematic Review Article

A systematic review paper should have a structured abstract of no more than 250 words using headlines as Objective, Data Sources, Study Selection, Data Extraction, Data Synthesis and Conclusions and with 3-10 key words for indexing.

Objective: Give precise statement of the primary objective for the review. Define if the review emphasises cause and diagnosis, prognosis, therapy and intervention, or prevention. Define if the review would be highly selective as including only randomized controlled trials (RCT) or have wider inclusion criteria.

Data Sources: Present data sources used, including any time restriction.

Study Selection: Describe criteria to select studies for detailed review. Specify methods used, as blinded review, consensus, multiple reviewers.

Data Extraction: Describe how extraction was made, including assessment of quality and validity.

Data Synthesis: Present the main results of the review and state major identified sources of variation between studies.

Conclusion: Give a clear statement of the conclusions made, its generalisability and limitations.

The Introduction of the paper could be similar to an original report, but without any longer literature survey, only reviewing shortly previous structural reviews and stating the reason and aim of the present review.

The Methodology section may have subheadings corresponding to the Abstract (Data Sources, Study Selection, Data Extraction) and should include clearly defined and reported inclusion and exclusion criteria, and specification of databases and other formal register, conference proceedings, reference lists and trial authors, which are used as sources. The full search strategy should be given so that it is easy to reproduce. If it is considered too long to be published in the article, an electronic document as an Appendix may be the alternative. The stages of selection usually include several steps, each undertaken by at least two independent researchers (identified in the Methods). There will be an initial selection from titles/abstracts to select the articles to be examined in full. The full articles should be re-screened against the selection criteria. The articles fulfilling the criteria should be subjected to quality assessment. Summarize in a flow chart with the number of articles selected and reasons for rejection at each stage.

The quality of the methodology should be assessed having an appropriate tool and also for outcome measures and blinding of outcome assessors. The tool that is most appropriate will depend on the extent and nature of the anticipated research evidence.

The Result section corresponds to Data synthesis in the Abstract and may present tables with long lists of selected articles. Extracted data from trials should, when available, include report of randomization method, study population, intervention methods and delivery, reasons to losses at follow-up, information related to treatment monitoring, post-intervention assessments and follow-up. Report the major outcomes, which were pooled, and include odds ratios or effects sizes. Use when applicable meta-analysis. Numerical values should, when possible, be accompanied with confidence intervals. State the major identified sources of variation between reported studies, as differences in treatment protocols, co-interventions, confounders, outcome measures, length of follow-up, and dropout rates. Tables and figures/ illustrations must be self-explanatory and have appropriate title or caption. The methods for synthesis of evidence should be pre-determined. Sometimes it may not be possible to pool the data, but a synthesis of best evidence ought to be given.

The Discussion section should be structured similar to an original report. The findings should be discussed with respect to the degree of consistency, variation, and generalisability. New contribution to the literature based on the review conducted and where information is insufficient must be stated. Providing the limitations of the review would be helpful. Suggest the need for new studies and future research agenda.

Length of paper: The total length of the text should usually not be more than 5000 words (corresponding to 8-9 printed pages) and in addition tables and the reference list. The reference list should be comprehensive and will therefore often be rather long. However, in the printed version of a review paper normally or more than 100 references will be accepted. If needed and without an upper limit, additional references may be published only electronically with a link to such an Appendix given in the original version of the paper.

❑ Narrative Review Article

A narrative (educational) review should have an unstructured Abstract which should not exceed 250 words, summarizing the current status of the knowledge about the topic reviewed followed by 3-10 key words for indexing.

The introduction should provide a background to a review which focuses on relevant literature published over the last few years that has advanced our understanding of the issue under consideration. The headlines in the review have to be chosen according to the need of that particular review.

There is usually no methology section. However proper Research strategy should be

given. Give a detailed strategy for inclusion of article in the review. Details of the database searched and the time period for which it was searched should be stated.

The discussion section could be structured along the lines for an original report. At the end of discussion, limitations of the study and key message may be given.

Conclusions of the article highlighting the problems, or areas for future research may be included.

Word count should be between 2000 and 5000 words with upto 5 tables and upto 3 figures/ illustrations and upto 100 references.

❑ Case Reports

Case Reports should be limited to three type: 1) written pages, including an unstructured abstract, 2 a short introduction; and 3) details of the case report followed by discussion and 6 to 10 references. Relevant documentary proof including pictures of the case (with the consent of the patient) or investigations like radiological or histopathological evidence should be submitted along with the manuscript.

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Letters to the Editor are considered for publication (subject to editing and abridgment) provided they do not contain material that has been submitted or published elsewhere. The letter must be typewritten and double-spaced. Its text, not including reference, must not exceed 250 words if it is in reference to a recent journal article, or 400 words in all other cases (please provide a word count). It must have no more than five references and one figure/ illustration or table. Letters referring to a recent journal article must be received within four weeks of its publication. Please include your complete contact details including full address, telephone number and e-mail address.

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All the manuscripts should be prepared according to the guidelines mentioned in table 1.

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An article with publication potential is sent to two external peer reviewers to evaluate the suitability of the article for publication based on its quality, novelty, and relevance for publication.

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If a reviewer is unable to meet the time frame agreed upon or he declines to review the manuscript, the manuscript is sent to another reviewer.

The editor may establish a system for rapid review of especially important manuscripts. This may include review only by editors or asking reviewers to complete their evaluations within a shorter period of time than is allowed routinely. Authors who seek rapid review should explain why their manuscripts merit such review.

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Decisions to reject a manuscript may be based on scientific weakness (poor research design, inappropriate methods of study), lack of originality, lack of importance and interest to readers, or simply lack of space. The editor will explain to authors the reasons for decisions to reject manuscripts. This is particularly important when the editor rejects a manuscript but the tone of the comments of the reviewers that will be sent to the authors is favorable.

The editor should actively encourage revision of manuscripts thought to be potentially acceptable. When an editor seeks revision of a manuscript, he should make clear which revisions are essential, and which are optional. If the comments of the reviewers are contradictory, the editor must decide and tell the authors which comments the authors should follow. Editors may add their own comments and suggestions for revision, and they (or some person in the editorial office designated by the editor) are responsible for ensuring that manuscripts meet the journal's policies regarding length and style.

In general, manuscripts that are potentially acceptable but need very major revision or additional data should be rejected, but the editor can encourage resubmission. When this is done, the editor should explain precisely what is needed to make the manuscript acceptable. It is a disservice to authors to request revision and then later reject the manuscript. As an alternative, the editor may choose to work closely with the authors to make the manuscript acceptable for publication.

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Table 1: Guidelines for drafting manuscripts of different types of studies

Type of study	Guidelines/ Initiative	Source
Randomized Controlled Trials	CONSORT Guideline/ Statement SPIRIT Checklist	http://www.consort-statement.org https://www.spirit-statement.org/wp-content/uploads/2013/08/SPIRIT-Checklist-download-8Jan13.doc
Studies of Diagnostic Accuracy	STARD	http://www.consort-statement.org/stardstatement.htm
Systematic reviews and meta-analyses	QUOROM PRISMA	https://journals.plos.org/plosntds/article/file?type=supplementary&id=info:doi/10.1371/journal.pntd.0000381.s002 http://prisma-statement.org/documents/PRISMA_2020_checklist.pdf
Observational studies in epidemiology	STROBE	http://www.strobe-statement.org
Meta-analyses of observational study	MOOSE	http://www.consort-statement.org/Initiatives/MOOSE/moose.pdf