EFFECT OF PREGNANCY ON THE DISEASE ACTIVITY IN ULCERATIVE COLITIS

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ABSTRACT

Objective: *To study the effects of pregnancy on the disease activity in ulcerative colitis.*

Methodology: *This experimental study was conducted at department of Medicine at Sultan Qaboos University Hospital Oman from July 2002 to December 2004. A total 60 diagnosed cases of ulcerative colitis proven on colonoscopy and biopsy and fairly well controlled disease at the time of enrollment were included in the study. Those who conceived and delivered during the study period were inducted as experimental group (total 30 patients), and those who did not conceive during the study period were inducted as control group (total 30 patients).*

Result: *Out of total 60 patients, 30 patients who were included in the study group, 24 remained well with mild exacerbation requiring only increased dose of mesalamine, four patients had moderate disease exacerbation requiring oral steroids along with mesalamine. Two patients had severe exacerbation that was controlled on parental steroids. Among control group, 25 had mild exacerbation, 4 had moderate exacerbation and 1 had severe exacerbation during the study period. The eventual out come was good in all patients.*

Conclusion: *It is thus concluded that a planned pregnancy when the disease is well controlled minimizes the risk of complications in patients of ulcerative colitis and also has got favorable outcome of pregnancy.*

Key words: *Ulcerative Colitis, Pregnancy, Complications.*

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INTRODUCTION

Ulcerative colitis is a chronic inflammatory condition of unknown etiology, characterized by diarrhea mixed with mucous and blood[1,2]. Predisposing factors include genetic, environmental, familial and host immune responses[3].

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Ulcerative colitis often affects the younger patients in child bearing age with almost equal sex distribution with mean age 34 years. The incidence of ulcerative colitis range from 2.2-15 per 100,000 annually with prevalence of 24-150 per 100,000 annually[4,5]. It is being encountered with increasing frequency in developed countries[6].

Clinical presentation of ulcerative colitis is highly variable but bloody diarrhea is a hallmark. Disease can be classified into mild, moderate and severe for management and prognostic purposes according to Truelove and Witts criteria based on bowel movements per day, fever, heart rate, anemia and sedimentation rate[7].

Women are often affected at their child bearing age and they may conceive during the illness. Studies have shown that almost 25% of females conceive during the illness[8,9]. The course of the disease during pregnancy appears to be determined in part by the activity of the disease at the time of conception. Approximately one third of women relapse during pregnancy (more commonly in the first trimester) which is similar to the rate observed over a nine months period in a non pregnant woman[10].

Ulcerative colitis is associated with a number of extra intestinal manifestation[11, 12]. Diagnosis of ulcerative colitis is established with colonoscopy and confirmed by biopsy[13]. The purpose of this study was to see the effects of pregnancy on disease activity in ulcerative colitis and to compare it with a control group.

METHODOLOGY

This experimental study was conducted in department of medicine at Sultan Qaboos University Hospital (SQUH) Oman during the period of July 2002 to December 2004. The sampling technique was non probability, convenience sampling.

Total 60 patients were included in the study after taking written informed consent, among them 30 were taken as control group who remained non pregnant during the whole period. These non-pregnant patients were on different modes of contraception including condoms (n=23), intrauterine contraceptive device (n=5) and depot progesterone (n=2). The rest of the patients became pregnant during the study period; as they were not on any mode of contraception. All patients were on mesalamine and folic acid, and had fairly well controlled disease. At the time of enrollment in the study every patient had to undergo detailed history, physical examination and a set of laboratory investigations including: complete blood count (CBC), liver function test (LFT), C-reactive protein, albumin, urea, creatinine, pregnancy test and ultrasound abdomen. These were repeated on monthly basis. Patients were divided into two groups labeled as pregnant and non pregnant group. The enrollment of pregnant patients was completed in 18 months from July 2002 to Dec 2003. Both groups were followed up till December 2004. Pregnant group was seen on monthly basis while the non pregnant group was followed up every 3 months. Thirty female patients each with biopsy proven ulcerative colitis that became pregnant and delivered during the study period were taken as experimental group and those who did not conceive during the study period were taken as control group. Both the groups had ulcerative colitis in remission at the time of induction to the study. Pregnant ladies and any patient of ulcerative colitis with uncontrolled disease or other co-morbid illnesses like hepatitis B and C, autoimmune hepatitis, diabetes mellitus, hypertension, etc were excluded from the study. SPSS v.13 software was used for the analysis.

RESULTS

Total 60 patients were included in the study. Age was presented as mean ± SD whereas discrete variable such as severity of disease was described in frequency and Chi square test was used to analyze the significant difference (p-value < 0.05 was considered as statistically significant). The mean age was 25±6 years. Among the pregnant patients 24 remained well with mild exacerbation and were controlled by increasing the dose of mesalamine. Four patients with moderate disease required oral steroids for the control of the disease. Two patients had severe exacerbation requiring intravenous steroids initially followed by oral steroids in ist trimester. The eventual outcome was good in all patients. All patients delivered normally and at the time of birth no growth retardation or congenital anomaly was observed. Among 30 control patients, 25 remained well with mild exacerbation, 4 had moderate exacerbation requiring oral steroids, and 1 had severe disease requiring intravenous corticosteroids.

In our study we didn't observe any adverse effect of pregnancy on ulcerative colitis (Table 1). There was also no significant difference between the two groups among severity of disease (p-values of 0.739, 0.999, 0.554 for mild, moderate and severe disease respectively).

Interpretation of Odds Value: In mild case an odds ratio of 0.8 indicates that the condition or event is less likely in the study group. In moderate case, an odds ratio of 1indicates that the condition or event is equally likely in both groups. In severe case, an odds ratio of 2.07 indicates that the condition or event is more likely in study group.

Table 1: Effect of pregnancy on disease severity on Ulcerative Colitis (n=60, 30 in both groups)

	Group 1	Group 2	p- value	Odds ratio	95% CI for Odds Ratio
Mild	24 (80%)	25 (83.34%)	0.739	0.80	0.215 - 2.972
Moderate	4 (13.33%)	4 (13.33%)	0.999	1.00	0.226 - 4.431
Severe	2 (6.67%)	1 (3.33%)	0.554	2.07	0.178 - 24.149

DISCUSSION

Ulcerative colitis is an idiopathic, chronic, relapsing, inflammatory condition of the colon that is immunologically mediated which specifically peaks during the child bearing age of the females. The impact of pregnancy on disease activity in ulcerative colitis, its outcome in term of complications is not studied in this part of the world. The study objectives were to see the effect of pregnancy on disease activity in ulcerative colitis.

About one fourth of the patients conceive after the diagnosis of Inflammatory bowel disease and the number of involuntary infertilities was comparable (around 10-15%) to that for general population. Voluntary infertility can be high (21-45%), especially in patients with previous history of surgery[8,9,14]. In our study the effect of the disease on the fertility was not studied.

Status of the disease severity at the time of conception plays a major role in the out come. Patients in remission at the time of conception are likely to remain in the same category during pregnancy and about one-third of the women relapse during pregnancy more commonly during the first trimester which is similar to the relapse rate in non pregnant women during the same time period. Remission achieved during pregnancy is likely to be sustained throughout the remaining pregnancy, in contrast disease that is active at the time of conception will remain active and may worsen[10,16]. In our study all the patients included were in remission and the progress of the disease during the study period was the same as in the control group and the results were comparable to other studies. For female patients who want to conceive the ideal timing is when the disease is in remission and pregnancy should be avoided during disease exacerbation, because the presence of active disease at the time of conception is associated with continued or worsening disease activity in approximately 70% of women[17].

The choice of drugs used during pregnancy should be based upon their relative safety and indications, One of the mainstays of treatment for maintenance of remission in IBD is 5-aminosalicylic acid (5-ASA) and its derivatives, sulfasalazine and mesalamine. Only small amounts of either agent are detected in maternal and cord plasma. Sulfasalazine and 5-ASA at doses of < 3 g/day have not been associated with any increased birth defects or kernicterus. Given the risk of sulfasalazine-induced folate deficiency, together with the heightened folate requirements in pregnancy and data showing a decrease in neural tube defects with folate supplementation, daily folic acid supplementation should be taken by any woman on sulfasalazine who is considering pregnancy[18]. All our study patients were on mesalamine and folic acid and the drugs were not changed in terms of type but the strengths were increased in cases of disease progression and at times steroids were added.

Generally, the risk of unfavorable pregnancy outcomes is increased if conception occurs during active disease[19,20]. In a population based study that included 756 women suffering from IBD found an increased incidence of preterm births and low birth weight compared to general population[14] whether the degree of disease activity accounts in part for the differences among studies is not known. The risk of congenital abnormalities or still birth does not appear to be increased. Clinical relapse may occur at any time during Pregnancy but tends to be particularly common in the first trimester[14,21]. As in our study we also observed that the exacerbation of the disease occurred usually in first trimester in the majority of cases. Fulminant colitis can be treated with colectomy with subsequent delivery of the healthy infant[22]. However surgery may be associated with premature labour or spontaneous abortion. In our study only 2 patients had severe exacerbation of their disease during pregnancy who were treated with parenteral corticosteroids and eventual outcome was good. The course of the ulcerative colitis in the post term period is not different from non pregnant patients.

Studies have suggested that the rate of delivery of healthy offspring in patients with ulcerative colitis whose disease is controlled has been similar to the general population[12]. Same findings were observed in our study group in which all the babies delivered were normal and no abortions, preterm or low birth weights were recorded.

CONCLUSION

It is concluded from our study that the effect of pregnancy on disease severity in ulcerative colitis is similar to the control group if pregnancy is planned according to advice of the physician at a time when disease is in remission.

LIMITATION

The study limitation was the enrollment of patients that were already in remission, so it was not possible to note the impact of pregnancy on disease severity in situations when disease was severe, its outcome in terms of complications.

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CONTRIBUTORS

AAS conceived the study and collected the data. AM &IA compiled the data and wrote the manuscript of the article. MA did statistical analysis and data interpretation. BB did the literature search. SA helped in data collection.

GRANT SUPPORT, FINANCIAL DISCLOSURE AND CONFLICT OF INTEREST

None Declared