

The role of general surgery in consultations of pregnant from obstetrics and gynaecology department

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Abstract

Aim: According to the current literature, the most common non-obstetric indications requiring surgery during pregnancy are appendicitis, biliary diseases, adnexal pathologies such as torsion or neoplasm, trauma, breast-related diseases and bowel obstruction. In this study, we sought to investigate the factors that may increase the risk for general surgery interventions in pregnant.

Material and Methods: We reviewed of all cases of pregnant that consulted to general surgery in May 2012-July 2018. 74 pregnant were consulted to general surgery for various reasons. Of those patients, 41 (55.4%) of them required medical and surgical intervention, while 33 (44.6%) had conservative treatment. Patients were divided into two groups as general surgery intervention (GSI) and no need to medical and surgical intervention, just observation was enough (non-GSI).

Results: The rate of urgent intervention (UI) was (9 out of 41) 22% in SI. Of the 9 pregnant, 8 (88.9%) had acute appendicitis. The other one is acute cholecystitis. The mean WBC was statistically higher in SI group than non-SI (13.568±3.892 vs 10.665±3.184, p=0.0008). Addition to this late pregnancies are more likely to be in GSI group.

Conclusion: According to our study results, late periods of pregnancy may increase risk for requiring GSI in pregnant and UI, as well. Also elevated WBC values should alert the physician about general surgery intervention requirement.

Keywords: Consultation; pregnant; surgery.

INTRODUCTION

The estimated incidence of pregnant women who require surgery other than obstetric indications is around 1-2% (1). According to the current literature, the most common non-obstetric indications requiring surgery during pregnancy are appendicitis, biliary diseases, adnexal pathologies such as torsion or neoplasm, trauma, breast-related diseases and bowel obstruction (2). When symptoms suggestive of pathologies other than the previously mentioned gynaecological diseases are encountered, then general surgery consultations are required, which constitutes 2% of pregnant women according to the current literature (3). In decision making, other than worrying for a patient, the pregnant population also has a special importance in determining the future of another life, foetus. Maternal health should always be considered in the forefront, but it should be kept in mind that the foetus is also an individual and its health should not be ignored.

Since in the first trimester surgery and general anaesthesia could be held responsible of abortions, vaginal bleeding and foetal structural anomalies; avoiding the surgical approach, unless urgent and necessary, is a general approach; therefore non-emergent surgical procedures are postponed and generally performed in the second trimester of pregnancy (2).

In our study, we retrospectively evaluated the general surgery consultations of the pregnant who admitted to the obstetrics and gynaecology clinic first. Non-obstetric symptoms of patients, medical and surgical intervention or medical observation was applied in terms of these symptoms were evaluated.

As it is quite known that some diseases that require surgical treatment may occur during pregnancy. Although most of them are obstetrical, general surgery interventions may be needed in some circumstances.

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MATERIAL and METHODS

Our study was approved by the ethics committee for clinical studies with the approval number of 2018-238-19/24-4 of Zonguldak Bulent Ecevit University, Turkey.

Before the study began, all human participants gave informed consent.

We reviewed of all patients who were pregnant that consulted to general surgery department between May 2012 and July 2018. Seventy-four pregnant were consulted to general surgery for various reasons. Of those patients, 41 (55.4%) of them required medical and operative interventions, while 33 (44.6%) did not require further intervention such as medical or operative.

All possible risk factors; we collected the data of those patients including age, history of previous surgery, number of pregnancy (Gravida), trimester of pregnancy (we evaluated the ratio of the count of the consulted patients; first half of the pregnancy period to second half of the pregnancy period ratio) and White blood cell (WBC) values. Patients were divided into two groups as general surgery intervention (GSI group) and non-required further intervention, just observation was enough (Non-GSI group).

Statistical analysis

The results are defined as percentage (%) and as mean±standard deviation. The results were analyzed by chi-square test, Student's t-test. P-value of less than 0.05 was considered statistically significant. Number Cruncher Statistical System (NCSS) software v 2007 (NCSS LLC, Kaysville, Utah, USA) was used for statistical analysis.

RESULTS

The primary complaints of 74 pregnant that were

consulted are; 31 of them having abdominal pain, 15 of them having lumpy mass (hernia) of various sides (umbilical, inguinal), 8 were having haemorrhoids, 5 were having cyst of breast, 4 of them having haemangioma of liver (according to the ultrasound report) and 11 of them consulted because of nausea and vomiting.

As shown on Table 1 above; the GSI group patients were older in age, but it was not significant (32 versus 30, $p=0.153$). In GSI group, the ratio of patients who were at first half of their pregnancy period (first 20 gestational weeks of their pregnancy) was 11.8%, whereas it was 35.9% in Non-GSI group and the difference was significant ($p=0.013$); as we mentioned before generally interventions are applied in the second half of the pregnancy.

Although in GSI group, gravidity was higher, the difference was not significant in comparison with the Non-GSI group (2.4 ± 1.4 vs 2.1 ± 1 , $p=0.29$). The GSI and Non-GSI group had similar rates of previous abdominal surgery history (8.8% vs 7.8%, $p=0.84$).

As subgroup analysis; the rate of need for urgent intervention (UI) was (9 out of 41) 22% in GSI pregnant. Of the 9 pregnant required UI, 8 (88.9%) of them had acute appendicitis. The other one is acute cholecystitis. The mean WBC was statistically higher statistically in GSI group than Non-GSI group (13.568 ± 3.892 vs 10.665 ± 3.184 , $p=0.0008$).

In none of the groups any foetal and maternal mortality was encountered and all the babies in GSI and Non-GSI group were delivered healthy. Except maternal morbidity because of general surgery operation to mothers, morbidity was not faced with in any of the mothers and babies.

Table 1. Differences between GSI and Non-GSI group of pregnant and p values

	General Surgery intervention (GSI)	Non-General Surgery intervention (Non-GSI)	P values
Number of pregnant	41 (55.4%)	33 (44.6%)	-
Age (mean, year)	31.7±3.7	29.9±6.4	0.153
Age (Median, year)	32	30	
Gestational week (mean)	22±9	21±10	0.65
Gestational week (Median)	20	21	
First trimester/Third trimester ratio	11.8%	35.9%	0.013
Gravida (mean)	2.4±1.4	2.1±1	0.29
Gravida (median)	2	2	
Ratio of Previous abdominal surgery history	8.8%	7.8%	0.84
WBC count (mean)	13.568±3.892	10.665±3.184	0.0008
WBC count (Median)	14700	10750	

DISCUSSION

Pregnant are always considered as a special group of patients, since they are carrying foetuses and also their

symptoms are often confusing, such as nausea and vomiting could happen in various reason for them. Practitioners are usually also reluctant to intervene pregnant patients, especially in the first half of the pregnancy period because

of the fear of teratogenicity issues. As obstetricians know, almost every pregnant patients of emergency service are consulted to obstetricians at first even the problem is not about an obstetrical issue because of that high responsibility of the foetus.

Also pregnant may have illnesses other than their pregnancies issues, so to remark this issue and evaluate the differences of GSI requiring and not requiring group differences in this study we took into account the consultations of obstetrics department to general surgery department.

Those patients were all pregnant and their complaints were other than obstetrical issues as we mentioned above.

According to the literature, approximately 1 in 635 women require non-obstetrical abdominal surgery during pregnancy (4). Also it is making more complicating to make a diagnosis in pregnant with abdominal discomfort because of the expanding uterus, which displaces other intra-abdominal organs making physical examination harder; the high prevalence of nausea and vomiting and abdominal pain that may routinely encountered in the normal obstetric patient and lastly the general reluctance to operate unnecessarily on a pregnant patient (4,5).

According to previous study conducted by Turgal et al, non-obstetrics operations were often performed in the second trimester of the pregnancy and most common symptoms were abdominal pain and nausea, ovarian torsion and appendicitis were the most common aetiologies causing non-obstetrical acute abdomen (6).

Previous literatures pointed the most common non-obstetrical conditions requiring surgery during pregnancy as appendicitis, biliary disease, ovarian disorders (torsion, neoplasm), trauma, breast or cervical disease, and bowel obstruction (2). In our study group also appendicitis constituted the highest percentage of UI group as we mentioned in results section.

Biliary tract disease is the second most common non-obstetric surgical problem in the literature (7). Gallstone formation is provoked in pregnancy because of weight gain, hormonal changes such as progesterone and also weakened contractions of gallbladder (4). In our study group, only one patient required surgery; laparoscopic cholecystectomy was performed because of acute cholecystitis, in UI sub-group of GSI group.

Acute intestinal obstruction is the third most common non-obstetric abdominal emergency with an incidence of 1 in 1500 pregnancies (8). However in our study group, none of the pregnant were having acute intestinal obstruction. We think, it was because of the relatively small sample size of our study, although the study period comprises 7 years (2012-2018).

Surgery in pregnancy carries the risk of foetal loss, preterm delivery (9-11). However, when acute abdomen is suspected, an aggressive approach is recommended, since delay in diagnosis of it, increases the chance of

complications resulted in both mother and foetus, even with maternal mortality could be encountered, as feared most. Also it should be kept in mind that according to the literature; fortunately, the risks of intraoperative or immediate postoperative obstetrical complications were relatively low (10). It is also prudent to remind this misunderstanding of the physicians, as well; no currently used anaesthetic agents have been shown to have any teratogenic effects in humans when using standard concentrations at any gestational age (12).

CONCLUSION

According to our study results, second period of pregnancy may increase risk for requiring GSI in pregnant and UI, as well. Also elevated WBC values should alert the physician about urgent general surgery requirement.

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