

ROLE OF ANTENATAL CHECKUP ON CAESAREAN SECTION RATE - STUDY AT CMH ATTOCK

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ABSTRACT

Objective: The present study was designed to study the role of antenatal check upon caesarean section (C-Section) rate in patients reporting to labour room.

Study Design: Prospective cohort study.

Place and Duration of Study: The study was carried out at Combined Military Hospital (CMH) Attock, from Oct 2014 to Mar 2015.

Material and Methods: A total of 447 patients who underwent treatment in CMH Attock were included in this study. Patients were divided into two groups: 1) Booked patients - the ones who consulted obstetrician regularly during pregnancy, 2) Unbooked patients - These patients do not consult obstetrician for ante-natal checkup during the pregnancy. The data was collected on a proforma and was statistically analyzed.

Results: About 77.85% of the total recruited patients in the study were booked while 22.15% were un-booked. A 37.6% of the booked patients had to undergo caesarian section (c-section) while 62.4% patient underwent spontaneous vaginal delivery (SVD). Whereas 51.5% un-booked patients had c-section while 48.5% patients underwent SVD. Point two percent and 2.5% of the overall patients had gestational diabetes and anaemia respectively. Three percent of the total pregnant patients were diagnosed as being hypertensive. Patient history revealed that 3% patients had bad obstetrics history and 76.9% of them attended ante-natal clinic.

Conclusion: In our set up overall C-section rate was 42.6% but in the booked group the rate was 37.6% as compared to the much higher 51.5% in the un-booked group thus indicating that high C-section rate in the un-booked group contributed in a major way to the overall C-section rate.

Keywords: Antenatal checkup, Booked cases, Caesarean section, Risk factors.

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INTRODUCTION

Antenatal care has importance for maternal health because of its capacity to detect preclinical/ early morbid conditions in pregnant mothers and the chance for promotion of health¹. By last century, surgical delivery is much safer but it cannot take the place of vaginal delivery regarding low maternal and newborn morbidity as well as less cost².

Antenatal care is an important parameter of Safe Mother Initiative. Obstetric health care's focus is to achieve a healthy mother and baby after pregnancy. There has been an increase in cesarean section (C-Section) rate globally and various parameters are being explored in an

attempt to bring it down. This is achieved by educating expectant mother, carrying out necessary investigations to rule out presence of any risk factor so that delivery may be conducted by trained professional at well-equipped set-up thus preventing and managing potential complications³. These targets are obtained by giving pregnant patients iron and vitamin supplements, tetanus toxoid immunization, monitoring of vital signs to detect pregnancy induced hypertension, laboratory investigations to rule out gestational diabetes⁴ and ultrasonography to look for any congenital abnormalities. The patients are also investigated to find out other risk factors like cardiac diseases, SLE, autoimmune disorders, antiphospholipid syndrome, endocrine disorders and infectious disease profile. In addition patient is provided literature to educate them about various health

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Received: 29 Mar 2016; revised received: 24 May 2017; accepted: 31 May 2017

issues related to pregnancy⁵. However, the patients who land up directly to obstetrics department in labour do not have all these antenatal checkups done and thus may be at increased risk of obstetric complications. The objective of conducting this study is to identify whether regular antenatal checkup offers any increased benefit and contributes towards successful maternal and fetal outcome of pregnancy by early detection and management of possible complications.

PATIENTS AND METHODS

The research was prospective cohort study carried out at CMH Attock from October 2014 to

Unbooked patients- These patients do not consult obstetrician for ante-natal checkup during the pregnancy. Detailed gynaecological and obstetric history was taken from the patients followed by all base line investigations to rule out the risk factors including pregnancy induced hypertension (PIH), anaemia and gestational diabetes. Investigations carried out included blood complete picture (CP), blood glucose and ultrasonography to rule out fetal anomalies and ensure fetal well-being. Blood pressure was recorded to rule out PIH. Descriptive data was analyzed through microsoft excel 2007 program. Chi-square and Fisher's Exact statistics was applied where appropriate using Graph Pad

Table-I: Spontaneous vaginal delivery and caesarian section among booked and unbooked patients.

Description	Spontaneous Vaginal Delivery (SVD)	Caesarian Section (C-Section)	χ^2	Relative Risk	<i>p</i> -value
Booked Patients	217 (62.4%)	131 (37.6%)	6.144	1.286	0.0132*
Unbooked Patients	48 (48.5%)	51 (51.5%)			

Table-II: Anaemic cases among booked and unbooked patients.

Description	Normal Patients	Anaemic	χ^2	Relative Risk	<i>p</i> -value
Booked Patients	338	10	40.16	1.233	<0.0001***
Unbooked Patients	78	21			

Table-III: Hypertensive patients among booked and unbooked patients.

Description	Normal Patients	Diagnosed and Treated Hypertensive Patients	Undiagnosed and Untreated Hypertensive Patients	χ^2	df	<i>p</i> -value
Booked Patients	338	10	0	13.39	2	0.0012**
Unbooked Patients	96	0	3			

March 2015. A total of 447 patients were recruited in the study through convenient sampling technique who reported to the labour room with full term. Both the patients who had undergone regular ante-natal checkup and those who reported directly in labor with no previous recorded antenatal visit were included in the study. Patients who refused to take part were excluded from the final data analysis. The patients were divided into two subgroups: 1) Booked patients - are the ones who consulted obstetrician regularly during pregnancy. 2)

Prism (version 5). A *p*-value ≤ 0.05 were considered significant.

RESULTS

Total 447 patients reporting to the labour room of CMH Attock were included in the study. Of these 348 (77.9%) were booked and 99 (22.2%) were un-booked. Out of the total booked patients, 131 (37.6%) patients had to undergo C-Section while 217 (62.4%) patient underwent spontaneous vaginal delivery (SVD). Among the un-booked patients group 51 (51.5%) patients had

c-section while 48 (48.5%) patients underwent SVD. The results are summarized in table-I.

Among all the recruited patients in the study, only 6 (1.3%) patients were diagnosed as having gestational diabetes. 31 (6.9%) of the total 447 patients had anaemia. Among the un-booked group, 21 (21.2%) out of the 99 patients had anaemia as compared to 10 (2.9%) anaemic patients among booked group (table-II).

History taking revealed that 13 (2.9%) out of 447 patients had bad obstetrics history and 10 (76.9%) of these patients attended ante-natal clinic and got themselves booked. Thirteen (2.9%) of the total pregnant patients were diagnosed as being hypertensive. At time of reporting, 3 (3%) un-booked patients had undiagnosed hypertension and landed up with eclampsia. Among the booked group, 10 (2.9%) patients were diagnosed and treated for pregnancy induced hypertension (table-III).

DISCUSSION

Since 1985, the rate of C-section, a common surgery, is recommended by WHO to be maintained between 5-10% although controversy existed regarding optimal rate. Avoidable C-section is not good health wise in terms of faster recovery/ better care instead is linked with adverse effects e.g. antibiotic treatment, admission in neonatal intensive care unit (NICU), transfusion of blood, hysterectomy and may result in even death. Globally, in most developed regions the C-section rate is about 21.1%, in lesser developed regions, the C-section rate is about 14.3% and in least developed areas C-section rate is about 2%⁶. World Health Report 2010 states that about 18.5 million C-sections are performed around the world each year; 73 percent i.e., 13.5 million C-sections were performed in those 69 countries where C-section rates were above 15 percent where births were 37.5 percent i.e. 48.4 million of the total. Countries having C-section rates less than <10 percent and those having C-section rate above 15 percent are considered to demonstrate underuse and overuse of C-sections respectively. Based on these criteria, there was

need of 3.18 million C-sections in the year 2008 and avoidable C-sections i.e. 6.20 million were done which cost about an average of US\$2.32 billion. During the era of conflict, it is a challenge to seek and provide maternal care. There can be interruption or reduction in services, makes it difficult to access a facility, and there can be targeting of health care workers. In these conditions, meeting the standard for well-established clinics can be difficult⁷.

The fact observed that majority of the patients (78.2%) had undergone regular antenatal checkup was very encouraging trend indicating that patients are aware of the importance of antenatal checkup.

GDM has two victims i.e. mother as well as child. Early detection of GDM prevents complications improve life status. Despite applying newly proposed cut-offs for GDM diagnosis by International Association of Diabetes and Pregnancy Study (IADPS), its prevalence is still very low i.e. <1%⁸. In our study, we also found similar observations i.e. gestational diabetes (0.2%) was not a significant problem ($p<0.001$).

In Tanzania, the incidence of anemia during pregnancy is high though they are undergoing antenatal attendance⁹. We have seen in our findings that the incidence of anaemia was same in un-booked group (5%) as compared to the booked group (1.7%) ($p<0.001$). It seems that there can be other factors e.g adequate drugs supply can be important to attain required hemoglobin levels but despite antenatal program can be least affective if anemia prevalence is high with late booking⁹.

In order to determine the effect of antenatal care for hypertension management in pregnancy, a study was conducted on 379 pregnant women and it was observed the a good antenatal care programme is very crucial for reducing hypertension in pregnancy¹⁰. In our study, it was found that 3% had undiagnosed hypertension in un-booked cases similar to the booked group ($p=0.935$).

Incidence of bad obstetrics history was not significant among the two groups in our case ($p=0.935$). It is a very good and encouraging thing that most of the pregnant ladies with bad obstetrics history go for booking.

In our set up the overall C-section rate was 42.6% but in the booked group the rate was 37.6% as compared to the much higher 51.5% in the un-booked group thus indicating that high c-section rate in the un-booked group contributed in a major way to the overall c-section rate. In a study by Bano et al the C-section rate was 31%¹¹ while in another study the rate was 41.4% and major portion of the c-section was in un-booked cases¹². In a study by Gulfareen et al the c-section rate was as high as 64.7% of which 43.9% were booked and 56% were un-booked with repeat c-section being the main indication¹³.

In a study conducted in Karachi¹⁴, indication for C-sections and its frequency was analyzed to give recommendations to lessen the rate of C-sections. The data showed that during the study period of one year, 778 C-sections were done with rate 27.94%. Among 85.86% subjects, the C-sections was performed on emergency basis whereas among 14.14% patients the C-section was their choice. About 71.34% females were non-booked/referred cases. The common indicators for C-sections were repeat C-section and other complications such as cephalo-pelvic disproportion, foetal distress, pregnancy associated hypertensive disorders etc. overall the C-section rate was high. The point to be noted was that most of the cases included in the study were unbooked/referred cases that had to undergo emergency C-section.

In another study¹⁵, conducted in Hyderabad on 380 C-section subjects during January to December 2007 showed that C-section rate was 64.7%. Among 380 C-sections cases, 225 cases i.e. 59.2% of the ladies had emergency C-section whereas 155 subjects i.e. 40.7% opted for C-section. It was observed that booked cases were 167 out of 380 C-section patients i.e. 43.9% whereas 213 out of 380 C-section patients i.e. 56%

were unbooked. The common reason for C-sections was the repeat C-section in 73 (19.2%) patients and other indications such as dystocia, fetal distress, and ante partum hemorrhage etc. Hence most of the unbooked patients underwent emergency C-section and this is what we have also observed in our study.

The increased c-section is a major burden on the health budgets of hospitals as it leads to longer hospital stay and higher patient morbidity leading to more need for transfusions thus increasing load on the laboratory, Operation theaters and wards¹⁶. In the era where debate is raging over cost-effectiveness in healthcare steps need to be taken to reduce the C-section rate in our medical setups¹⁷.

CONCLUSION

Antenatal care is very important to prevent pregnancy associated complications i.e. gestational diabetes, anaemia and C-sections. Regular checkup is crucial for a safe mother as well as new born. We need to encourage our population about benefit of regular antenatal checkup of pregnant ladies through coordinated health care awareness programmes involving the obstetricians and health care administrators.

CONFLICT OF INTEREST

This study has no conflict of interest to declare by any author.

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