ACUTE RENAL FAILURE IN OBSTETRIC CARE UNIT

GULFISHAN TARIQ, SHABNAM NAZ, NARGIS SOOMRO
Department of Obstetrics & Gynaecology, Dow University of Health Sciences, Karachi

ABSTRACT
Objective: *To determine the frequency of patients suffering acute renal failure in an Obstetrical Care Unit.*
Study Design: *Case Series.*
Setting & Duration: *Department of Obstetrics and Gynaecology, Dow University of Health Sciences, Karachi from October 2005 to December 2006.*
Methodology: *Study of 40 consequetive cases of acute renal failure who were admitted in Gynae Unit II DUHS and developed ARF.*
Results: *Out of 4620 Obstetrical admissions 40 patient developed ARF. Among the risk factors identified were 70% late referrals 35% had haemorrhage abruption or placenta praevia or post partum haemorrhage 27.7% had sepsis secondary to illegal abortion or retained dead fetus, 12.7% had volume depletion from GI losses 12.7% were of hypertensive disorders of pregnancy and 7.5% had miscellaneous causes.*
Conclusion: *Population at risk of ARF must be identified established and newer strategies for prevention and treatment must be evaluated and those patients, who warrant early referral must be identified.*

KEY WORDS: *Placenta Praevia, Post-partum Haemorrhage, Retained Dead Fetus*

INTRODUCTION

Gravidic acute renal failure became a rare complication of pregnancy in industrialized countries, whereas it is still frequent in developing countries and responsible for great fetomaternal morbidity and mortality. The gravidic ARF is still a critical problem leading to in the women and the fetus. So the most effective methods are still the prevention and management of obstetrical complications.[1]

The most common cause of acute renal failure in obstetric care units are severe sepsis and hamorrhagic shock. Mortality reported in this kind of patient is about 70%.[2] Acute renal failure is the most challenging clinical problem when it occurs in pregnancy. It requires understanding of the normal physiology of kidney in pregnancy and natural history of different underlying renal diseases when pregnancy occurs. By understanding the causes of renal functional deterioration in pregnancy a logical differential diagnosis can be established allowing appropriate therapeutic decisions to preserve both maternal and fetal wellbeing.[3] In recent years the incidence of acute renal failure has decreased in developed countries, the cause for decline of ARF in pregnancy has been reported to be liberalized abortion laws and improved prenatal care.

While in developing countries poor health infrastructure, lack of antenatal health clinics leading to development of major complications at the time of childbirth which is mostly conducted at home by untrained personal. This is a study of 40 cases of acute renal failure so as to identify patients at risk and to develop a strategy to prevent it.

Correspondence:
Dr. Gulfishan Tariq, Associate Professor,
Department of Obstetrics & Gynaecology,
Dow University of Health Sciences, Karachi.
Res. 15C, Block-2, KAECHS, Karachi.
Phones: 0300-8237746.
E-mail: gulfishan.tariq@yahoo.com

METHODOLOGY

Study of consecutive 40 cases of acute renal failure who were admitted in Gynae Unit II either referred cases, or admitted for the first time in emergency or booked cases from 1st October 2005 to 31st December 2006. Both antenatal and the postnatal cases were included.

RESULTS

Out of 4620 Obstetrical admissions including cases of abortions, 40 patients developed ARF. Referred cases were 28(70%), new admission were 5(12.5%), booked cases were 7(17.5%), Mean age was 26 years, mean parity was 3.

Uterine haemorrhage and sepsis were major causes of ARF. 38 patients recovered completely 1 patient had irreversible renal failure 32 patients required haemodialysis one patient died during acute phase of illness. For details of causes refer to Table I.

DISCUSSION

Acute renal failure is characterized by rapid fall in glomeruler filteration rate clinically manifest as an abrupt and sustained rise in urea and creatinine. Life threatening consequences include volume overload, hyperkalaemias and metabolic acidosis. Acute renal failure is both common and treatment is expensive and carries a high morbidity and mortality. As it is often preventable identification of patients at risk and institution of appropriate preventive measures are crucial. In incipient or established acute renal failure rapid recognition and treatment may prevent irreversible loss.[6]

Sepsis is one of the frequent cause of acute renal failure that according to data from world wide literature affects about 20% of patients admitted to intensive care unit.[2] In our study this was one of the main contributor to ARF and was mostly secondary to unsafe abortion. Sepsis is associated with procoagulation state which can lead to DIC, haemorrhage or micro vascular thrombosis. Renal hypoperfusion is main risk factors.[2] Study conducted at Ataturk university regarding pregnancy and etiology of acute renal failure in pregnancy, concluded that causes were abortion (30%), preeclampsia and eclampsia 12%, post partum haemorrhage 15%, fetal death 12%, abruptio placenta 6% and placenta praevia 1%.[4]

Table I. Causes of acute renal failure

Causes	Number	%
APH	4	10
PPH	10	25
Sepsis (Un Safe Abortion)	9	22.5
IUD	2	5
GI Losses	5	12.5
Hypertensive disorders	5	12.5
Anaphylactic reaction	1	2.5
Pregnancy with liver disease	3	7.5
Pre existing renal disease	1	2.5
Total	40	100

Study done at Sindh institute of urology and transplantation civil hospital Karachi showed total of 18% cases of acute renal failure were of Obstetrical origin. All of these patient were known to be previously healthy. Acute renal failure occurred in association with APH in 15, post partum haemorrhage in 10, intra uterine death of fetus in 11 pre eclampsia or eclampsia in 9 and septic abortion or puerperal sepsis in 9 cases. 36 patients required dialysis.[5] Study done by Peng DZ showed pregnancy induced hypertension as main cause of ARF in late pregnancy.[7] North Indian study concluded late referrals, frequent sepsis and high incidence of bilateral diffuse cortical necrosis as contributory factor to high mortality 55.3% in patients with ARF of Obstetric origin.[8]

Stratta in their study of 10 year period found irrersible renal damage in 11.6% out of with 26.3% cases were of preeclampsia and eclampsia. Worse maternal renal prognosis occurred in these cases and concluded that pregnancy related acute renal failure a crucial occurrence and most effective measure would be a program of careful prevention.[9] All these studies and international literature suggested that acute renal failure is a life threatening illness with high mortality inspite of advances in supportive care. High demands are placed or health care resources. Pathophysiology is not well understood therapeutic options are limited.

Priorities in management of acute renal failure include early recognition, institution of appropriate preventive measures, optimization of fluid balance, identification and treatment of cause, timely initiation of renal replacement therapy where appropriate.

CONCLUSION

Acute renal failure in pregnancy is a preventable entity. Incidence is high in our set up due to poor health infrastructure. Delayed referral of cases from primary and secondary health center and private sector, high incidence of unsafe abortions, poor access to health care system. Pathogenic factors identified single or in combination are heamorrhage, septicemia, eclampsia and DIC.

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