

# OBSTETRICAL ACUTE RENAL FAILURE;

Analysis and outcome of patients in tertiary care hospital

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**ABSTRACT.....Background & Objective:** Acute renal failure is one of serious complication in pregnancy, in first trimester is usually related to unregulated and septic miscarriage while in third trimester it is due to obstetric complications. This prospective case serious descriptive study was conducted to determine the frequency, etiology and outcome of patients suffering from acute renal failure. **Settings:** Department of Gynecology & Obstetric at Liaquat University Hospital Hyderabad. **Duration:** One year (from 1st June 2011 to 31st May 2012) **Patients and Methods:** Patients admitted in labor room during antepartum, intrapartum or post partum period were scrutinized by history, clinical examination, and investigations. Those with urine output less than 50cc in 24hours were defined as case of ARF. Predesigned proforma filled to analyze etiology and outcome of patients with acute renal failure. **Results:** Out of 3220 patients admitted, 35 patients presented with acute renal failure giving incidence of 1.080%. APH(28.57%), PPH(25.7%), P.sepsis (14.28%) and Hypertensive disorder(5.14%) were leading cause of ARF. 60% patients recovered from injury and mortality in these patients were 11.4%. **Conclusions:** Poor health care facilities and lack of quality antenatal healthcare clinics were the major identified causes.

**Key words:** Acute Renal failure, Obstetrical complication, Irreversible Renal failure.

## Article Citation

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## INTRODUCTION

Acute renal failure is one of serious complication in pregnancy<sup>1</sup>. In first trimester; it is usually related to unregulated and septic miscarriage while in third trimester it is usually due to obstetric complications. In developed world the incidence of acute renal failure in pregnancy has declined over past recent decade. It is less than 1% of all western society<sup>2</sup>. This is because of several factors has contributed to marked improvement in the incidence and survival in pregnancy related acute renal failure including the significant decrease in septic miscarriage and more successful early intervention in management of complicated pregnancy<sup>3</sup>. So far developing countries scenario has not changed much more in last few decades. In a study in North India 22% of cases of Acute renal failure were of obstetric origin and maternal mortality in these patients were 50%<sup>4</sup>. In another study from India incidence of cortical necrosis were 24%<sup>5</sup>, while it is reported 13% by Ramzan in one study from Pakistan<sup>6</sup>. The most common cause of Acute renal failure in developing countries in obstetric care units are severe sepsis and hemorrhagic shock

and mortality in these patients is about 70%<sup>7</sup>. The incidence of obstetric related ARF in developing countries like Pakistan has not changed significantly. There is no such Data to compare. There are only few articles showing pregnancy related Acute renal failure 7-10%<sup>8</sup>. Mortality and morbidity in obstetric acute renal failure depends on under lying renal lesion and associated complications .It is high when associated with HELLP syndrome, Severe PET, Sepsis , DIC and PPH. Recovery depend on type of damage. It is good in acute tubular necrosis as compare to bilateral renal cortical necrosis<sup>9</sup>. The aim of this study is to pick – up magnitude of problem and to develop a strategy to prevent it.

## PATIENTS AND METHODS

This prospective case serious descriptive study was conducted in obstetric unit II, LUMHS during June 2011 to May 2012. Departmental approval for study was obtained. The inclusion criteria of the study were the cooperative patients regardless of maternal and gestational age admitted in the labor room during antepartum, intrapartum or post partum period and

had interest to participate in the study were scrutinized by history, clinical examination, and investigations. The exclusion criteria of the study were the known cases of renal failure / already on hemodialysis or the patients with malignancy and on chemotherapy and the patients with known glomerular or autoimmune disease. After fulfilling the inclusion criteria, those with urine output less than 50 cc in 24 hours were defined as case of ARF. Predesigned Performa filled to analyze etiology and outcome of patients with acute renal failure. The data was entered, saved and analyzed in SPSS Version 16 and the frequency and percentage (%) was calculated.

## RESULTS

Out of 3220 patients admitted, 35 patients presented with acute renal failure giving incidence of 1.080%. Table-I showed etiological factors for acute renal failure. Obstetric hemorrhage was responsible for ARF in more than 50% of cases followed by P .sepsis 05(14.28%), Hypertensive Disorder 05(14.28%) and anaphylactic reaction 04(11.42%). Table 2 shows outcome of these patients. 57.14% (20) of patient completely recovered from injury, 17.14 % (6) partially recovered, 14.28% (5) had permanent damage and the mortality recorded in our patient was 11.4%.

Cause	No	Percentage
PPH	09	25.71%
APH	10	28.57%
P. Sepsis	05	14.28%
Hypertension	05	14.28%
Anaphylactic Reaction	04	11.42%
HELLP Syndrome	02	5-714%
Total	35	100%

Table-I. Causes of acute renal failure

Outcome	No	Percentage
Complete Recovery	20	57.14%
Partial Recovery	06	17.14%
No recovery (irreversible bilateral Cortical neurosis)	05	14.28%
Total no: of Patients died.	04	11.4%

Table-II. Outcome of patients with ARF

## DISCUSSION

Maternal mortality and morbidity is an embarrassing reminder of global inequality; there is no other public health statics for which the Gulf between the developed and developing world is so large. Apart from APH, PPH, Sepsis and Eclampsia mortality and morbidity associated with acute renal failure shows marked difference between developed and developing countries. In developed world during 1950-1960, 22% cases of all ARF were obstetric in origin and mortality in these patients were between 16-48%<sup>10</sup>, while Strette quoted 0.5% obstetric renal failure of total ARF cases and no maternal death between year 1988-1994<sup>11</sup>. It looks that it is vanishing from industrialized world. There are several factors which have lead to improvement, like improvement in Antenatal care, decrease Post abortion sepsis and timely recognition and management of High risk pregnancies. Although obstetrical ARF is also on decline in developing countries still it is one of the main causes of acute renal failure in this part of world<sup>12</sup>.

Frequency of Acute renal failure in current study was 1.08% while it was reported 2.8% from Peshawar<sup>13</sup>, 0.8% from Karachi<sup>14</sup> while in a study from parent university 36% of Acute renal failure admitted in Nephrology unit were because of obstetric reasons<sup>15</sup>. Another study from same university shows that 2% patients with Abruption placenta develop acute renal failure<sup>16</sup> while the recent review of published literature by Waiker et al<sup>17</sup> shows pregnancy related ARF has not been listed as one of cause of ARF in developing

countries<sup>16</sup>. Main reason of Acute renal failure in current study was obstetric hemorrhage similar to study by Akhtar<sup>13</sup> from Peshawar and Ali from Frontier Province<sup>8</sup>. Obstetrical hemorrhage is leading cause of morbidity and mortality in developing countries from decades and it is still as proved by the current study. 19.19% of patients was with hypertensive disorder and HELLP syndrome similar to study from same university by Ansari MR, et al<sup>15</sup> while it was responsible for 12.5% and 16.66% cases of acute renal failure from Karachi<sup>14</sup> and Peshwar<sup>18</sup>. Lack of quality of Antenatal care and late referral in critical condition were found to be responsible for PIH related ARF. Sepsis is part of past in developed countries but it is still common in developing countries. 14.28% cases of ARF in current study were due to septicemia. It is preventable and treatable illness, however, timely recognition is important so for recovery is concerned there were complete recovery in 60% cases, partial recovery in 17.14% and 14.28% had permanent damage. This is comparable to study by Ansari MR, et al<sup>15</sup> study differ from study by Bibi S, et al in which 50% patient had irreversible damage<sup>16</sup>. 4(11.4%) of our patients could not survive comparable with that of Waikar SS, et al<sup>17</sup> but less than study of Khalil M, et al<sup>18</sup>.

## CONCLUSIONS

Keeping in front the results of current study, it looks that obstetrical renal failure is a major health problem in our set up, which is now a rare entity in developed countries. However, difficulties associated with overall health system and physical infrastructure, political and high illiteracy rate etc creates hindrance in smooth development and there for difficulties in achieving goals in developing countries. This calls for an improvement in existing health care facilities and public awareness programmes and better care in public sector hospitals.

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