ACUTE RENAL FAILURE IN OBSTETRICS

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SUMMARY

Twenty-three cases of acute renalfailure (A.R.F.) in obstetrics over 2 years were studied. The incidence of A.R.F.in obstetrics was found to be 1 in 636 deliveries. The common causes were pre-eclampsia, abruptio placentae, D.I.C. and septicemia. Oliguria was the commonest mode of presentation. the mean duration of the oliguric phase being 3-6 days. Based on clinical pointers, as well as investigative parameters such as B.U.N. values above 100 mg.%, serum creatinine above 8 mg.% and serum potassium above 6.5 mEq/L. patients were taken up for dialysis. Patients were dialysed by peritoneal or haemodialysis. The number of dialysis per patient averaged between 2 to 8. Analysis of the response to treatment showed that 65.2% of the patients recovered completly passing into the diuretic phase. One patient recovered partially going on into chronic renal failure. The mortality rate was 26.09%, the important causes of death being uremia, hyperkalemia, bleeding disorders, liver dysfunction, pulmonary oedema and septicemia.

INTRODUCTION

Acute renal failure (A.R.F.) in obstetrics encompasses a diverse group of clinical states, associated with acute supression of renal function. Although it is an unusual complication of pregnancy, occuring once in 1000 to 5000 gravidas, it accounts for 50% of all episodes of A.R.F. in women (Silke etal 1980).

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Prevalence of A.R.F. in pregnancy has a bimodal distribution. The first peak is at 12-16 weeks of gestation and is related to septic abortions, and the second peak is at 35-40 weeks, which usually follows as a consequence of abruptio placentae, pre-eclampsia, eclampsia or haemorrhage.

MATERIAL AND METHODS

A retrospective study of 23 cases of acute renal failure in obstetrics over a period

of 2 years from January 1988 to December 1989, was undertaken at the Lokmanya Tilak Municipal General Hospital. The age, parity, etiopathological basis, clinical presentation, mode of management and the prognosis were evaluated.

OBSERVATIONS

During the period of study, there were 14630 obstetric admissions and 23 cases of A.R.F., giving an incidence of 1 in 636 deliveries. Seventy-eight percent of the patients were more than 25 years of age, and 56.5% of the patients were of parity 3 or more. The etiological factors are shown in Table I, the common causes in our series being pre-eclampsia, eclampsia, abruptio placentae, septicemia and disseminated intra-vascular coagulation (D.I.C.). There was also one rare case of viperine snake bite as the cause of A.R.F.

As seen in Table II, most cases (78.2%) were of the renal type, 4 being pre-renal (17.4%), while there was only one case of post-renal azotemia which resulted from accidental bilateral ureteric ligation in a case of septic (criminal) abortion requiring hysterectomy. Table III shows the different forms of clinical presentation,with oliguria being the commonest. There were 2 cases of acute renal failure of the non-oliguric type. The mean duration of the oliguria or anuria before onset of the diuretic phase varied from 3 to 6

TABLE I

ETIOLOGICAL FACTORS

Etiological factor	No. of cases	Per cent
Abruptio placentae	5	21.7%
Pre-eclampsia	2	8.7%
Eclampsia	3	13.04%
D.I.C.	3	13.04%
Septicemia	5	21.7%
Postpartum haemorrhage	2	8.7%
Iatrogenic	1	4.3%
Miscelleneous :		
Snake-bite poisoning	1	4.3%
Gentamycin induced	1	4.3%
TOTAL :	23	

TABLE II

TYPE OF RENAL FAILURE

Type of renal failure	No.of	per cent
Pre-renal	4	17.3%
Renal	18	78.2
Post-renal	1	4.3%

TABLE III

CLINICAL PRESENTATION

Clinical presentation	No. of	per cent
Oliguria	17	73.9
Oligo-anuria	3	13.04%
Anuria	1	4.35%
Nonoliguric	2	8.7%

days. If the oliguria lasted more than 21 days, a percutaneous renal biopsy was taken for histopathology. Of the five biopsies taken 3 were seen as tubular necrosis, while in one case acute cortical necrosis was seen. This case presented with anuria and showed red cell casts in the urine. She later went into chronic renal failure, was worked up for renal transplant, but expired before that due to septicemia. That apart, there was also one case diagnosed on biopsy as post-partum haemolytic uraemic syndrome (H.U.S.)

All patients to start with received conservative medical therapy to treat the uraemia and infection. The indication for dialysis were clinical pointers such as pulmonary congestion secondary to fluid overload, pericardial rub, altered sensorium etc., or investigative parameters such as B.U.N. above 100 mg.% serum creatinine above 8 mg.% and serum potassium above 6.5 mEq/L. patients were dialysed routinely by haemodialysis, and when required on an emergency basis, by

TABLE IV

MODE OF TREATMENT

Mode of treatment	No.of cases	Per cent
Conservative management	11	47.8%
Haemodialysis	9	39.1%
Peritoneal dialysis	1	4.3%
Peritoneal dialysis followed by haemodialysis	2	8.7%

peritoneal dialysis. The frequency of dialysis was 3 times per week or more if required, until they passed into the diuretic phase. As seen in Table IV, nearly half of the patients (47.8%) were managed conservatively, while dialysis was required in 12 cases (52.2%). The number of dialysis per patient varied from 2 to 8.

As regards response to treatment, 15 patients (65.2) recovered completly passsing into the diuretic phase with near normal B.U.N. and serum creatinine values. The patient with post-partum H.U.S. recovered partially going into chronic renal failure with a serum creatinine of 2.5 mg.% at discharge. There were 6 deaths, the mortality rate being 26.09%. The significant causes of death were uraemia, hyperkalemia, D.I.C.liver dysfunction and septicemia.

DISCUSSION

A.R.F. has a wide spectrum of etiological factors in obstetrics. In a comparable study by Jai Prakash et al (1985). the significant causes were found to be blood loss (65%),septicemia (25%), endotoxic shock (45%), toxaemia (15%), D.I.C. (25%) and idiopathic H.U.S. (15%).Idiopathic haemolytic uraemic syndrome is a special entity occuring in the post-partum period in an otherwise uncomplicated pregnancy. It is characterised by rapidly developing A.R.F., often oliguric, associated with microangiopathic haemolytic anaemia (Segonds et al 1979). Heparin and fibrinolytic agents may be beneficial, and when the disease cannot be controlled by medical treatment, bilateral nephrectomy followed by renal transplant is indicated. (Sun et al, 1975). Smith et al (1968) in their series found a high incidence of A.R.F. following abortions (61.9%). However in our study only 13.1% cases occured following abortions, and by far the commonest causes were found to be abruptio placentae and septicemia. Acute tubular necrosis is the predominant lesion in obstetric renal failure, as compared to acute cortical necrosis. This was true in our series as was also reported by previous workers (Harkins, 1974; Jai Prakash, 1985).

It is evident that, in general the incidence of A.R.F. in obstetrics can be greatly minimised by an effective management programme that should include timely delivery in cases of severe pre-eclampsia and abruptio placentae, prompt replacement of fluid and blood in any case of massive haemorrhage, close watch in all such cases on renal function after delivery, and effective use of higher antibiotics to prevent septicemia in cases of septic abortion and puerperial sepsis. With modern techniques of management in specialised units with peritoneal and haemodialysis, maternal mortality and morbidity can be greatly reduced.In our series, the overall maternal mortality rate was 26.09% which is significantly less than previously reported figures of 40% to 75%. Furthermore, today deaths are most often due to infection, liver dysfunction (hepato-renal failure) or due to the underlying renal disease, and death as a direct result of renal failure is avoidable in most cases.

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