

HAEMODIALYSIS IN OBSTETRIC ANURIA

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Summary Abstract

Obstetric anuria with acute renal failure (ARF) is not uncommon. Of 28 patients studied, 16 had septic abortion and 12 due to complications of late pregnancy. Total 19 cases had undergone haemodialysis with a recovery rate of 78%. Pathogenetic factors in the causation of renal failure singly or in combination were loss of blood (82.1%), septicaemia (42.8%), hypotension (17.8%) eclamptic toxæmia (14.2%). Acute tubular necrosis (ATN) is the commonest renal lesion of ARF. Frequent sepsis and late referral contributed significantly to the mortality (22%). The hemodialysis has promising role in cases of ATN presenting as ARF.

Introduction

The study of acute renal failure is an

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exciting topic in the medical science with regard to its management by different methods. More so when the malady is noticed in association with pregnancy. In the light of emergencies due to ARF arising from obstetric causes, the present study has been undertaken in the subjects admitted to the S.C.B. Medical College Hospital, Cuttack during a period of 15 months from August, 76 to October, 77. All of them presented in a state of anuria/oliguria with clinical and biochemical settings of ARF. Subjects having prior history of chronic renal illness and insufficiency were excluded. The purpose of the present study is to find out the role of 'haemodialysis' in the management of cases of acute obstetric anuria.

Materials and Methods

The study includes 28 subjects comprising 16 cases of induced septic abortion (including one M.T.P. case), 5 cases of antepartum haemorrhage, 3 postpartum haemorrhage and 4 of toxæmias of pregnancy. Detailed history with clinical and biochemical investigations for renal involvement were made in all the cases.

Besides the meticulous obstetric management for the individual causes when

there was no hyperkalaemia, the following conservative schedule of treatment was offered initially to treat this acute crisis and observed for around 24-48 hours.

1. Fluid intake = 12-15 ml/Kg. Wt. + last 24 hour output.

2. Proteins of 0.5 Gm./Kg. body Wt. with 20 Gms. Proteins of high biological value alongwith carbohydrates 100 Gms and Fats = 100 Gms yielding around 1500 calories/day. No salt or Potassium was allowed.

3. Frusemide- a dose from 200 Mg to 1 Gm. I.V. in 24 hours.

4. Antacids/Vitamins.

Failure to respond to the above regimen or in presence of hyperkalaemia, urgent hemodialysis was carried out by putting an A.V. shunt first and then connecting to the kills artificial kidney under Cordis monitoring device in 15 hours/week schedule.

Results

Age: The maximum incidence was noticed in the age range of 21-40 years. It was seen that maximum peak was in first and third trimesters.

TABLE I
Duration of Gestation (in Trimester)

Case	First	Second	Third
S.A.	11	5	—
A.P.H.	—	1	4
P.P.H.	—	1	2
T.P.	—	—	4

Clinical Features

It was noticed that maximum number of patients had loss of blood and dehydration. One case of septic abortion and another of toxoemia had signs of pulmonary oedema as shown in Table II.

Serum Electrolytes. Two cases of septic abortion had life threatening hyperkalaemia requiring urgent haemodialysis as shown in Table III.

TABLE II
Clinical Picture

C. Feature	S.A.	A.P.H.	P.P.H.	T.P.
Dehydration	11	4	2	1
Anaemia	16	5	3	2
Oedema	4	1	1	4
Hypertension	2	—	—	4
Bleeding	13	5	3	2
Raised J.V.P.	1	1	—	—
Proteinuria	15	3	3	4
Pulm. Oedema	1	—	—	1

TABLE III
Serum Electrolytes

Cases	Na + m Eq/L 135-150			K + 3.5-5 6 m Eq/L	
	N	Low	High	N	High
S.A.	15	1	—	14	2
A.P.H.	4	1	—	1	4
P.P.H.	3	—	—	1	2
T.P.	3	—	—	1	3

The urinalysis findings observed in different groups have been outlined in Table IV.

The pre-dialysis mean value of serum creatinine in the subjects was 10.4 and that of blood urea was 138 mg%. Table V shows the severity of renal failure in different groups prior to hemodialysis.

Of 28 cases, 19 had to undergo hemodialysis as this group did not respond to conservative schedule (Table VI).

However 15 had ultimate recovery following hemodialysis (Table VII).

Throughout the hemodialysis procedures, usual complications like fall of B.P., oozing from shunt, fever and rigors, membrane leakage, etc. were tackled adequately to avoid the mortality risk.

One graphic representation in a case of septic abortion has been outlined showing the excellent role of hemodialysis in such cases.

TABLE IV
Urinalysis

Findings	S.A.	A.P.H.	P.P.H.	T.P.
Proteins	13	4	2	4
Red Cells	11	5	3	3
Puscells	15	2	1	1
Casts	13	2	2	4

TABLE V
Severity of Renal Failure

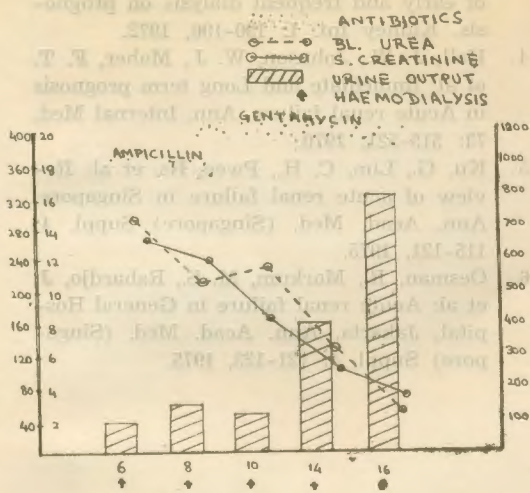
DATA	Range	Mean
Day of referral (days)	2-19	6
Peak Pre-dialysis Urea (mg%)	84-297	138
Peak Pre-dialysis creatinine (mg%)	3.8-14	10.4
Peak Serum Potassium M Eq/L)	3-6.6	4.9
Duration of Oliguric phase (days)	2-23	8
Dialysis per patent (no)	1-7	4

TABLE VI
Results of Conservative Treatment

Category	S.A.	A.P.H.	P.P.H.	T.P.	Total %
Response	2	3	1	3	32.1
Non-response (H. Dialysis)	14	2	2	1	67.9

TABLE VII
Results of Haemodialysis

Result	S.A.	A.P.H.	P.P.H.	T.P.	Total
Recovery	12	1	2	—	15 (78.2%)
Mortality	2	1	—	1	4 (21.8%)



CLINICAL COURSE OF A PATIENT OF SEPTIC ABORTION & A.R.F.

Fig. 1

Twelve kidney biopsy specimens (11 SA + one A.P.H.) were available for study which revealed changes consistent with acute tubular necrosis.

A comparative analysis of incidence of obstetric anuria figures by various authors in the field has been shown in Table VIII.

TABLE VIII
Comparative Incidence of ARF (Obstetric Origin)

Authors	Country	Year	A.R.F. (%)
Ku <i>et al</i>	Singapore	1975	16.0
Oesman <i>et al</i>	Indonesia	1975	29.2
Firmat <i>et al</i>	Argentina	1975	27.2
Kennedy <i>et al</i>	U.K.	1973	24.7
Klein Knecht <i>et al</i>	France	1972	28.4
Hall <i>et al</i>	U.S.A.	1970	7.0
Chugh <i>et al</i>	India	1976	22.1
Present Series	India	1977	29.0 (19/65)

Discussion

It appears that acute renal failure following obstetric causes is not uncommon. However the data on its incidence during pregnancy is scanty. The com-

parative incidence reported from different dialysis centres has been shown in Table VIII.

The frequency distribution of ARF in our patients was in the first and third trimesters. The commonest mode of induced abortion in this part of the country is the use of sticks as abortifacients rather than chemicals.

The interesting feature of the study is the high incidence of ARF mostly ATN because of poor perfusion of renal tissue by haemorrhage and septicaemic shock where haemodialysis has promising results.

In the present series none had non-oliguric renal failure although this is another mode of presentation. Of the dialysed group of septic abortion, 2 had evidences of D.I.C. (15%). All 19 patients continued to receive medical therapy and dialysis until patient passed into a diuretic phase or died. In case of pulmonary oedema and life threatening hyperkalaemia, dialysis has been recommended urgently without waiting for the response to conservative schedule. The

covery rate of 78% obtained in the present series by early and frequent dialysis has been compared with the figures of other workers in the field as shown in Table VIII.

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