

ACUTE RENAL FAILURE IN KUALA LUMPUR

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SUMMARY

One hundred and fifty two patients were treated for acute renal failure in 1976-1978. Overall mortality was 46 (30.3 percent) and was highest among the surgical patients 15 (51.7 percent) and lowest in patients with outflow tract obstruction 2 (8.7 percent) uncontrolled sepsis was the commonest cause of death.

INTRODUCTION

The pattern of acute renal failure varies, even in countries in the tropics (Ku *et al*, 1975; Sitprija & Benyajati 1975; Chugh, 1979) with ready availability of dialysis, uraemia can be controlled, making prognosis of the renal failure more favourable. However the complications of the underlying disease causing the acute renal failure continues to carry significantly high mortality, particularly among the surgical and trauma groups (Ku *et al*, 1975; Maher & Schreiner, 1962; Kennedy *et al*, 1973). This report reviews our experience in Kuala Lumpur.

CLINICAL MATERIAL

All patients with acute renal failure treated by the Nephrology Unit from 1976-1978 were included in this review. Patients with acute renal failure treated by other units in the hospital were excluded. Conservative management of acute renal failure was applied in all cases. There were 152 patients, 92 males and 60 females ranging in age from four months to 84 years. Eighty-one patients were referred from outside the Selangor/Kuala Lumpur area.

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TABLE I
 AGE DISTRIBUTION OF 152 PATIENTS WITH
 ACUTE RENAL FAILURE

(Age)	No.
Under 1 year	1
1 - 9	14
10 - 19	19
20 - 29	31
30 - 39	41
40 - 49	21
50 - 59	12
60 and above	13
Total	152

range: 4/12 to 84.

Autopsy was performed in only 1 case. Mortality was considered to be due to renal failure if uraemia was not controlled at death, with no other obvious cause of death.

AETIOLOGY

Causes of acute renal failure were considered under medical, surgical and obstetric groups. Patients with outflow tract obstruction were considered separately from the surgical group.

In the medical group, acute glomerulonephritis (17), septicaemia (11), poisoning (6), and haemolysis (6) were the main causes. The poisons were paraquat (4), organophosphate (1) and hair perming lotion (1). All patients with haemolysis had G-6PD deficiency. Acute renal failure in 6 cases were unexplained.

Trauma with multiple injuries (10), ascending cholangitis (8) and peritonitis (5) accounted for most surgical patients with acute renal failure. No cases of burns were admitted to the Nephrology Unit, presumably severe cases died before requiring dialysis.

TABLE II
MEDICAL CASES WITH ACUTE RENAL FAILURE

	No. of Patients	Mortality
Glomerulonephritis	17	5
Septicaemia	11	5
Poisoning	6	3
Haemolysis	6	
Leptospirosis	3	
Chronic liver disease	3	3
Hepatitis	2	
Insect stings	2	
Diabetic coma	2	1
Jering ingestion	2	
Myeloma	1	1
GIT bleeding	2	
Heavy exercise	2	1
Dehydration	1	
PTB, Renal TB	1	
Unknown	6	
	67	19 (28.4%)

TABLE III
SURGICAL CASES WITH ACUTE RENAL FAILURE

	No. of Patients	Mortality
Ascending Cholangitis	8	2
Trauma	10	5
Peritonitis	5	5
Malignancy (Intraabdominal)	3	2
Intestinal obstruction	1	
Thorocotomy, septicaemia	1	1
Liver abscess	1	
	29	15(51.7%)

Patients found to have outflow tract obstruction were not known to have renal disease and were referred in acute renal failure. Fifteen patients had calculi in both outflow tracts and 4 had calculi in single functioning kidneys, 2 of whom had solitary kidneys. One patient had bilateral ureteric strictures due to tuberculosis.

Infection was the prominent feature in the obstetric group, and was associated with septic abortion (13), puerperal sepsis (4), septicaemia posthysterectomy (2) and pelvic abscess.

TABLE IV
PATIENTS WITH OUTFLOW TRACT OBSTRUCTION PRESENTING IN ACUTE RENAL FAILURE

	No. of Patients	Mortality
Bilateral stones	15	1
Stone in single functioning kidney	4	
Bilateral obstruction malignant infiltration	1	1
Ureteric stone and stricture in opposite ureter	1	
Ureteric stone and obstructive prostate	1	
Bilateral ureteric stricture	1	
	23	2 (8.7%)

TABLE V
OBSTETRIC CASES WITH ACUTE RENAL FAILURE

	No. of Patients	Mortality
Septic abortion	13	4
Eclampsia & PET	9	2
PPH	4	2
Puerperal sepsis	4	
Septicaemia following hysterectomy	2	1
Pelvic abscess	1	1
	33	10 (30.3%)

CLINICAL COURSE

Eighty-nine were oliguric, 39 were not oliguric at any stage, and 24 were completely anuric for at least 24 hours, most were for several days.

Infection was commonly present; with 8 out of the 23 patients with outflow tract obstruction having positive urine or blood cultures. Sixty-four other patients in the other 3 groups had infection, with highest incidence in the surgical group 26 (92 percent), lowest in the medical group 17 (25 percent) and intermediate in the obstetric group 20 (63 percent).

Fifteen patients were haemodialysed using the multipoint dialyser or a disposable dialyser. Peritoneal dialysis was performed on 125 patients.

Twelve patients were not dialysed. Haemodialysis was performed on post surgical patients and those with multiple injuries. Repeated peritoneal dialysis was performed to maintain blood urea levels around 200 mg%.

MORTALITY

Overall mortality was 46 (30.3 percent). It was highest in the surgical/trauma group 15 (51.7 percent). Peritonitis and multiple injuries accounted for 10 of the 15 deaths in this group. Ascending cholangitis (2), postthoracotomy septicaemia (1) and intra abdominal malignancy (2) accounted for the rest. Obstruction had the lowest mortality 2 (8.7 percent). One died of myocardial infarction and one patient with malignant infiltration of both ureters died several months after discharge from hospital.

Obstetric mortality was 10 (30.3 percent). 4 patients with septic abortion, and 2 out of 3 patients with Eclampsia died. One of the 2 eclamptic patients who died recovered normal renal function, but never regained consciousness and died at home weeks after discharge. Two patients with postpartum haemorrhage and 2 with septicaemia died. Medical mortality was 19 (28.4 percent). Glomerulonephritis septicaemia and poisoning accounted for 13 of the 19 deaths. Three out of 4 patients with paraquat poisoning died.

Uncontrolled sepsis was the commonest cause of death 25 (54.3 percent). Three patients died of uraemia, 3 patients with gastrointestinal bleeding and 1 with pulmonary oedema were still in renal failure when they died.

DISCUSSION

The majority of patients treated were referred from other states. As many patients with acute renal failure were treated by various units in the hospital, this series does not truly reflect the local pattern of acute renal failure. It does however represent the patients with acute renal failure requiring dialysis.

Acute glomerulonephritis and septicaemia were the commonest causes of acute renal failure in the medical group. Leptospirosis was seen in only 3

patients, unlike the experience in Bangkok and Singapore (Ku *et al*, 1975; Sitprijia & Benyajati, 1975) where it was the commonest cause of acute renal failure. Septicaemia was also commonly present in the obstetric group.

Most patients were oliguric and 24 were completely anuric, of whom 13 were due to obstruction. Complete anuria due to causes other than obstruction was uncommon.

Overall mortality was 46 (30.3 percent). The highest mortality was the surgical/trauma group 15 (51.7 percent). Outflow tract obstruction had the most favourable immediate prognosis 2 (8.7 percent). Despite intensive antibiotic therapy, uncontrolled sepsis was the commonest cause of death, which is the experience of other centres (Ku *et al*, 1975; Maher & Schreiner, 1962; Kennedy *et al*, 1973). Uraemia as the cause of death in 3 patients is probably an underestimation, as 4 other patients dying of gastrointestinal bleeding and pulmonary oedema were still in renal failure when they died.

While uraemia can be controlled by dialysis further improvement in overall mortality can only occur with better control of sepsis, which was the main cause of death.

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