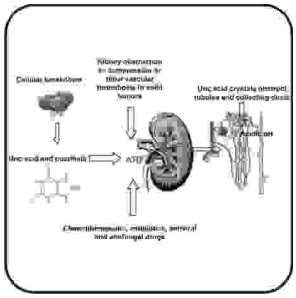
ORIGINAL **PROF-1309**

ACUTE RENAL FAILURE:

AN EXPERIENCE AT NEPHRO-UROLOGY DEPARTMENT CHANDKA MEDICAL COLLEGE HOSPITAL LARKANA



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ABSTRACT… Objective: To find out the various causes of acute renal failure (ARF) and its out come in our setting of tertiary Care Hospital in rural areas. **Design:** A retrospective Study. **Setting:** Nephro-urology department Chandka Medical College teaching hospital Larkana. **Period:** From March 1998 to March 2005. **Patients & Methods:** Review of 294 patients of acute renal failure admitted in Nephro-urology department Chandka Medical College teaching hospital Larkana. Detailed history, physical examination and laboratory data of 294 consecutive patients of acute renal failure were analyzed. **Result:** 294 patients were included in this study. Among them 149 (51.7%) were in the younger age group (less than 40 years) with dominance of males (1.61 to 1.00 male to female ratio). Major cause of ARF was pre renal, seen in 172 (66.6%) patients, 70 (23.8%) of all cases of acute renal failure had gynecological and obstetrical back ground. Other causes C.V.A in 24 (9.3%), HHD in 14(4.5%). Glomerulonephritis in 22(8.5%),and obstructive uropathy in 16(6.2%). 92 Patients (31.3%) improved on conservative treatment,166(56.5%) needed dialysis and 36(12.2%) left against medical advice. **Conclusion:** This data reveals that pre renal element is the single most important cause of acute renal failure, in which commonest cause was pregnancy related ARF followed by C.V.A,HHD, glomerulonephrits and obstructive urophathy. Early indentification, referral treatment of pre renal factors, good peri natal care and good therapeutic measures substantially bring down the incidence of acute renal failure. 12.2% patients left against medical advice due to heavy expenses on the treatment and needs NGOs and Government support for treatment of poor patients.

INTRODUCTION

Acute renal failure can simply be defined as sudden cessation of renal functions. It may be reversible. Acute renal failure is a life threatening illness. The mortality has remained high despite introduction of haemodialysis 25 years age. Acute renal failure is an extremely morbid and needs heavy cost for treatment. The significant proportion of patients progresses to end stage renal disease requiring permanent dialysis. To the nephrologists acute renal failure remain an extremely frustrating disease because the patho-physiology is not well understood and the limited therapeutic options, force the nephrologist to sit on the side lines and wait for renal function to return[1,2]. ARF is estimated to occur in 5% of the hospitalized patients[3]. The prevalence and pattern of ARF varies with Geographical distribution, influenced by socio-economic factors, culture, environmental and nutritional conditions[4]. ARF is one of the most common organ failure in hospital practice and is very challenging emergency seen in surgical, medical and obstetrical practice. Thus ARF remain major health problem world wide[5]. Ischemia is the most common cause of acute renal failure as patho-physiology is concerned. In last decade, several new and important patho-phyiosological mechanisms under lying the renal dysfunction have been discovered. These mechanisms include the role of calcium and calcium dependant enzymes, oxidant stress of polarity of the tubular cell, tubular obstruction and argnine glycine aspartic acid, intracellular adhesion molecules and growth factor[6,7].The purpose of this study was to see the etiology and out come of ARF at our setup, which is tertiary care hospital in rural area of Pakistan.

MATERIAL AND METHODS

Two hundred ninety four consecutive patients, who received treatment at nehphro-urology department Chandka Medical College Hospital Larkana from March 1998 to march 2005 were included in this study. Criteria for diagnosis was acute detorioration in renal functions presence of normal sized kidneys or hydronephrotic kidneys with normal cortical thickness on ultrasound. Patients who were diagnosed to have pre existing CRF during their stay in hospital were excluded from the study. All patients were then followed until recovery of their renal functions, death or discharge from hospital . After identification of the ARF patients, A detailed history was taken with special emphasis on loose motion, vomiting, heamorrahge abdominal pain, heamaturia, fever, pharyngitis , blood transfusion, chest pain, pregnancy related problems, physical torture and drug intake like antibiotic, NSAIDS or indigenous medicines.All patient underwent physical examination particularly assessing their volume status (Pulse, blood pressure), jugular venous pressure, skin turgor, edema, temperature, respiratory rate, type of breathing, state of consciousness, pericardial rub, basal crepitations, any septic focus and rashes over body. Laboratory investigation included complete urine analysis if possible. Complete blood examination (Hb%, ESR, TLC, DLC platelets, ECG chest X-ray, abdominal ultrasound, ASO titre. All patients were initially treated with conservative medical management. Treatment was designed according to the need of each particular case. Dialysis was instituted only when conservative measures did not help.

RESULTS

Two hundred ninety four patients of acute renal failure who received treatment were analyzed. Age of the patients was between 2 to 85 years. Maximum numbers of patients were between the age of 31 to 50 year (45.4%) and male female ratio was 1.6 to 1. Eight cases were of the pediatric age group (Fig 1). ARF due to pre renal reasons were seen in 61% of patients followed by pregnancy related problems. Other cause include C.V.A,HHD, acute glomerulonephritis and stone disease. Seventy (23.8%) patients had ARF because of pregnancy related problems. Antepartum haemorrhage (APH) and post partum hemorrhage (PPH) were responsible for more than half of the cases in this group. Other pregnancy related causes include septic abortion, I.U death, eclampsia and pre-eclampsia (Fig-2). Nausea and vomiting were commonest symptoms present in 71.4% of the patients while 66% Patient were oligouric, 16.3% were non-oliguric, and 17% of the patient were

anuric. 160(54.4%) patients were having breathlessness at the time of presentation (Fig-3).

Fig-1. Age distribution chart

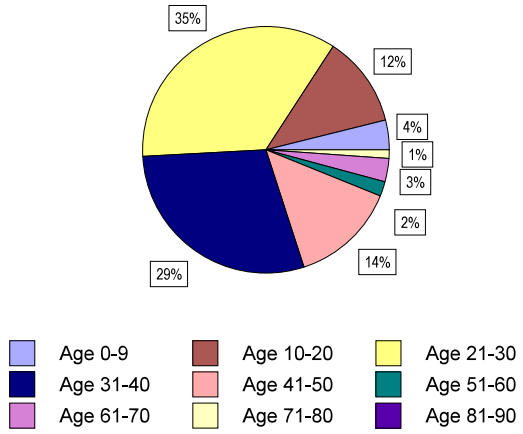
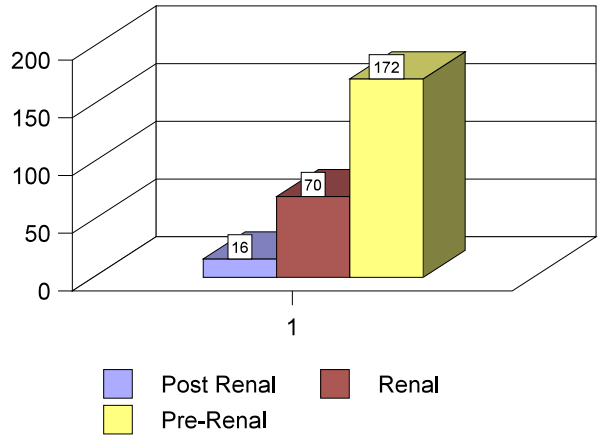


Fig-2. Causes of ARF



All patient were having tachycardia while 140 (47.6%) had volume over load, 120 (40.8%) were volume depleted and 34(11.6%) patients were having normal volume clinically. 160(54.4%) were clinical acidotic. (Kussmauls breathing) (Fig 4). Blood urea was more then 100mg/100ml in 128 patients (43.5%) while it was more then 200mg/100ml in 60(20.4%) patients. Serum creatinine was more then 6mg/100ml in 140(14.6%) patients while 154 (52.4%) patients had 2-6mg/ 100ml 180(61.2%) patients were hyponatremic 80(27.2%) patients showed ECG changes, 200 (68%) patients were hypocalcemic while 50(17%) patients had pulmonary edema on x-ray chest (Fig-5). 92 (31.3%) improved on conservative treatment, 166(56.5%) under went dialysis and 36(12.2%) left against medical Advise.

Fig-3. Clinical Features (symptoms)

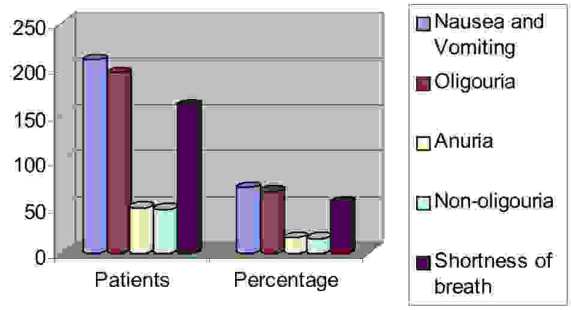
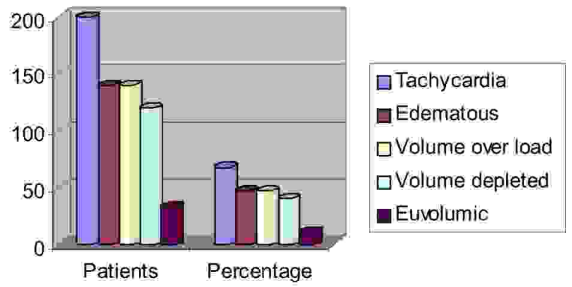


Fig-4:clinical Features (signs)

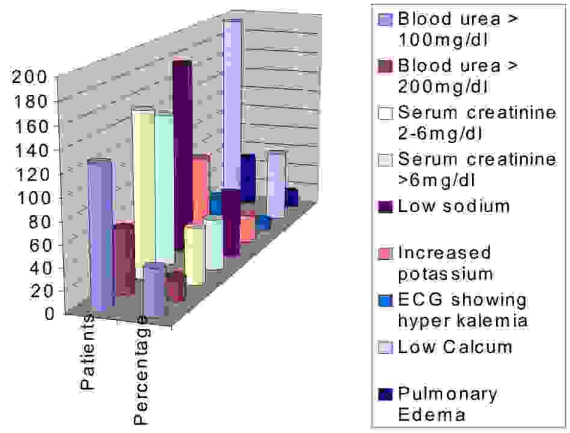


DISCUSSION

Acute renal failure is characterized by an acute and usually reversibly deterioration of kidney function that develop over a period of days or week and result in uremia. A marked reduction in urinary volume is usual but not invariable. Ten to twenty percentage of the patients of acute renal failure are non oligouric relatively happy group[7,8]. To improve the out come of patient with

ARF is one of the most important task for 21st century nephrologists and other critical care physicians[6,9]. In Pakistan the whole scenario looks frightening because of inadequate health facilities rampant quackery and delayed referral to equipped hospital. Injudicious use of drugs, poor perinatal care aggravates the situation further[5]. Hadidy et al[10] reported a mean age of 35 years for ARF patients.

Fig-5. Laboratory And Clinical Findings



Kuska et al[11] found ARF occurs most frequently between 20-50 years of age, which is comparable to our study. Most of the acute renal failure patients in our study had pre-renal element about 129 (52.4%). North American study revealed that 55% of all acute renal failure had pre-renal element[12], which is comparable to our study. A recent prospective study by Hou et al[13] also found pre-renal azotemia to be single most common cause of ARF in a general medical , surgical hospital. In our experience, pre-renal form accounts 40-80% of all the cases of ARF[13]. However prolonged pre-renal azotemia can lead to ischemic acute Cortical necrosis (ACN) with significant morbidity. Thus early recognition and prompt therapy of ARF are important[14].Pregnancy related acute renal failure accounts 70(23.81%) patients. These figures are very frightening and quite high as compared to the western population but comparable to Lagos study[15]. In developed world the incidence of pregnancy related ARF has substantially came down as reported by various observers. Canavase has reported that, the incidence of pregnancy related ARF has fallen from 40% in 1958 to 4.5% in 1998. Another study based on 20 years observation states that the incidence of pregnancy related ARF fell from 43% to 2.8%. This is probably due to legalization of abortion in the western world[16]. So ARF is becoming an increasingly rare complication of pregnancy in developed world because of fall in illicit abortion, improved antenatal care and better maternal Care[17]. A Pakistani study by Tahir Shafi reported that incidence of pregnancy related ARF is much higher that reported in literature and 50% of their patients did not show any recovery in kidney functions[15]. Early recognition of ARF with prompt therapy of reversible causes and safe delivery leads to more favorable out come for both mother and fetus[16, 17].The percentage of cases with obstructive uropathy as the cause for ARF has been found to be relative high in the Middle East and Kingdom of Saudi Arabia[18]. However in our study, the number of patients is less as these patients present with chronic renal failure rather then acute. In our study, acute renal failure due to acute GN was seen in 14(4.5%) patients. Franklin and collaborate study showed 7% of all the patients of acute renal failure were having glomerulonephritis[12]. Lagos study reported acute glomerulonephritis in 4.6% of the cases of ARF[15]. Ali et al all also reported that 8% of ARF patients were due to acute glomerulonephritis[5]. Mortality of ARF ranges from 50 to 80%. This high morality rate is not related to ARF itself, but is due to multiple organ dysfunction[6]. Ramussion et al reported that age had no significant relationship with mortality in ARF. However other reports have correlated the prognosis of ARF to age[17, 18].

CONCLUSION

ARF is a major health problem with a high morality rate . A patient whose renal failure is associated with other systemic disease constitutes a high risk. The etiology of ARF is quite varied but pre-renal element is the causative factor in more than half of the patients (52.4%). Pregnancy related ARF patients 70(23.8%) comes second after medical causes. These figures are

very frightening to early referral, identification and treatment of pre-renal factors, good peri natal care and careful therapeutic decisions can substantially bring down the incidence of acute renal failure. 12.2% patients left against medical advice probably due to cost of treatment and dialysis. So there is strong need of the NGO and Government supporter for this type of treatment.

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