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Research Paper

Assessment of Etiology of renal failure in pregnancy in Tertiary Care Centre

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I. INTRODUCTION

1.Obstetrics renal failure, also known as pregnancy related acute kidney injury,is a critically and potentially life-threatening complication of pregnancy.

2.Several anatomical and physiological adaptations are happening in the kidneys during the course of normal pregnancy.
3.The awareness of these physiological changes in pregnancy is of utmost clinical dominance.

4.Serum creatinine of 1.0mg/dl and BUN of 13mg/dl would be recognized as a normal value in non-pregnant individuals, but it reflects renal impairment during pregnancy

5.PR-AKI (Pregnancy related acute kidney injury) is a heterogeneous disorder with multiple etiologies that can occur at any time during pregnancy and in the postpartum period.

6.Major risk factors for obstetrics renal failure are preeclampsia, chronic hypertensive disorders, antepartum haemorrhage, postpartum haemorrhage, sepsis, and other infections.

7.The risk profile for pregnancy related acute kidney injury decreases due to good antenatal care, decline in sepsis-associated with abortion and child birth.

II. AIMS AND OBJECTIVES

- To assess the aetiology of renal failure inpregnancy.
- To assess maternal outcome.
- To assess fetal outcome

INCLUSION CRITERIA:
1.Patients who presented or developed renal failure during hospital stay were included in the study.
2.Puerperal women with renal failure.
3.Pregnant women having preexisting renal failure or renal transplant cases.

CRITERIA FOR RENAL FAILURE :• Serum creatinine >1.5 mg/dl
- Blood urea >40 mg/dl
- Urine output<400 ml in a 24-hour duration
- Need for dialysis.

EXCLUSION CRITERIA :
- Age of more than 45 years.
- The patient not given consent for study

III. MATERIALS AND METHODS

STUDY DESIGN : Hospital-based prospective observational study.

STUDY SETTING : Tertiary care hospital at government general hospital Kakinada.

STUDY SUBJECT: Pregnant and puerperal women with acute renal failure or preexisting renal disease,developing renal failure during pregnancy.

METHODOLOGY:
1. Informed consent was taken from the study subjects involved in the study
2. Detailed history, clinical examination, and relevant laboratory investigation would be carried out for the pregnant and puerperal women developing renal failure or existing renal failure.
3.Laboratory investigations: blood urea, serum creatinine, serum uric acid, electrolytes, liver function test, complete blood count, bleeding time, clotting time, P.T.A.P.T.T., INR when indicated, abdominopelvic and obstetrical ultrasound, urine routine are done.

IV. RESULTS

Thisisaprospectiveobservationalstudy.Thetotalnumberofcasesinmystudywere30.

Age distribution of cases:

A.G.E.(YEARS)	**Number of patients(n=30)**	**Percentage**
<20	2	6.7%
20-25	16	53.3%
26-30	8	26.7%
31-40	4	13.3%
Total	30	100%

Distribution of cases according to parity**:**

Parity	Noofpatients(n=30)	Percentage
Primi	12	40%
P2	12	40%
P3	5	16.7%
>=P4	1	3.3%
Total	30	100%

Distribution of cases according to trimester

GESTATION	NOOFCASES(N=30)	PERCENTAGE
SECONDTRIMESTER	2	6.7%
THIRDTRIMESTER	17	56.7%
PUERPERIUM	9	30%
PASTDATES	2	6.7%
TOTAL	30	100%

Distribution of cases according to presenting complaints at the time of admission:

Symptoms	Numberofpatients	Percentage
Reducedurineoutput	4	13.3%
Anuria	2	6.7%
Edemaoffeet	13	43.3%
Bleedingpervaginum	8	26.7%
Fever	4	13.3%
Abdominalpain	16	53.3%
Breathlessness	4	13.3%
Vomiting	4	13.3%
Loosestools	4	13.3%
Hypertension	6	20%
Alteredsensorium	2	6.7%
Jaundice	5	16.7%

Distribution of cases according to primary etiological factor:

Primaryetiologicalfactor	Numberofpatients	Percentage
Preeclampsia	5	16.7%
Imminenteclampsia	2	6.7%
H.E.L.L.P.	3	10%
Eclampsia	2	6.7%
Hemorrhagicshock	8	26.7%
Septicshock	8	26.7%
Hypovolemicshock	1	3.3%
DKA	1	3.3%
Total	30	

Distribution of cases according to types of renal failure:

Type	Number of patients	Mortality
Pre-renal	17(56.7%)	9(52.9%)
Renal	13(43.3%)	8(61.5%)
postrenal	0	0
TOTAL	30	

Distribution of cases according to the mode of delivery:

Modeofdelivery	Numberofpatients (n= 30)	Percentage
Inducedlabour(term)	3	10%
Inducedlabour(preterm)	4	13.3%
Spontaneouslabour(term)	2	6.7%
Spontaneouslabour(preterm)	3	10%
Assisted	1	3.3%
L.S.C.S.	14	46.7%
laparotomy	2	6.7%
undelivered	1	3.3%

Distribution of cases according to blood transfusion:

Bloodtransfusion	Noofpatients(n=30)	Percentage
Yes	27	90%
No	3	10%

Distribution of cases according to the maternal outcome:

Maternaloutcome	Numberofpatients(n=30)	Percentage
Completerenalrecovery	13	43.3%
Death	17	56.7%
Total	30	100%

Distribution of cases according to perinatal outcome:

Perinataloutcome	Number of babies(n=29)	Percentage
Term(live)	12	41.4%
Preterm(live)	3	10.3%
Abortion	0	0%
IUD(term)	8	27.6%
I.U.D.(preterm)	5	17.2%
Stillbirth	1	3.4%

Antenatal visits	No of cases	Percentage
Booked	8	26.7%
Unbooked	22	73.3%
Total	30	100 %

Distribution of cases according to their antenatal visits:

V. CONCLUSION

- Incidence of obstetric renal failure in our hospital was 1.6%.
- The incidence in developed countries is low due to improved obstetrics care.
- Pre-eclampsia / eclampsia is the most common cause of obstetric renal failure in developed countries followed by hemorrhagic shock and sepsis.
- Maternal and peri natal mortality remained high in AKI patients.
- Pre term and low birth weight are the complications in AKI cases.
- Early recognition and management of hypertensive disorders could reduce the incidence of AKI.
- Recognition and treatment of intravascular volume depletion to prevent renal ischemia are important.
- Assuring good antenatal and perinatal care, proper management of obstetric complications and appropriate time referral of cases to tertiary center are the crucial tools in preventing morbidity and mortality in obstetrics renal failure.

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