Original Research Paper

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A CLINICAL STUDY OF NEONATAL SEPTICEMIA CONDUCTED IN KURNOOL MEDICAL COLLEGE/GOVT.GENERAL HOSPITAL,KURNOOL

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ABSTRACT Neonatal septicemia is a major cause of morbidity and mortality in new born infants. **OBJECTIVES:**To study the incidence,predisposing factors,clinical profile,outcome. **MATERIALS AND METHODS:**The study was conducted over a period of November-2017-february 2019 ,50 neonates who are showing well documented signs are included in this study,blood investigations like hb,tc,dc with band neutrophil ratio,peripheral smear,micro esr,crp,blood culture,csf,urine,pus,rectal swab will be subjected to c&s and radiological investigations when indicated. **RESULTS:**culture was bacteriologically positive in 34% cases. ciprofloxacin had maximum sensitivity of 88.2%.Leucopenia< 5000/cmm had sensitivity of 47%,specificity of 66.67% and PPA of 42.11%,toxic granulation had 70.56 sensitivity,63.65%specificity and 50%PPA.B/N>0.2 had 88.2%sensitivity 62.4%PPA. m-ESR had sensitivity of 70.56%,specificity of 84.84%,PPA of 70.5%, C-reactive protein had 88.2 sensitivity and 87.8% specificity and 78.95%PPA ,case fatality rate was 28% **CONCLUSION:** Clinical features of neonatal septicaemia are non specific and vague.sepsis screen has good sensitivity,specificity,PPA.combination of tests increase the specificity and PPA. As an individual test C-reactive protein has highest sensitivity.

KEYWORDS : Neonatal septicaemia, blood cutures,sepsis screen

INTRODUCTION:

Neonatal septicaemia is defined as a bacterial infection documented by a positive blood culture in the first four weeks of life,which is remined as a major cause of infant morbidity and mortality despite the development of broad spectrum antimicrobial agents and technical advancements in life supportive therapy. Neo natal sepsis can be divided into two subtypes based on the onset of symptoms during first 72hrs of life or later,early onset sepsis is caused by organisms prevalent in genital tract or in labour room,ascending infection,transplacental hematogenous spreads are important mechanisms of early onset sepsis,even though the positive blood culture is diagnostic but it is time consuming and has success rate of only 40%,hence early treatment with rational antibiotic therapy is possible with the help of certain indirect markers such as leucopenia,toxic granules,band form to neutrophil ratio,micro esr and CRP (sepsis screen),early diagnosis of neonatal sepsis by clinical examination is vital.

AIMS AND OBJECTIVES:

1)To study the incidence and predisposing factors of neonatal septicaemia.
2)To study the clinical profile and outcome of neonatal septicaemia.
3)To study the early indicators and correlation with all clinical aspects of neonatal septicaemia
4)To study the bacteriology and antibiotic sensitivity pattern of neonatal septicaemia

MATERIALS AND METHODS:

This study was conducted in Kurnool medical college and hospital during November 2017-february 2019 on 50 neonates below the age of 28 days with clinical suspicion of neonatal septicaemia were included in this study. After admission detailed history was taken and thorough clinical examination was done,these neonates had following symptoms and signs which were suspicious of septicaemia ,symptoms like fever, refusal of feeding, vomiting, diarrhea, abdominal distension, irritability, rash and signs like hypothermia, hyperthermia, tachycardia, bradycardia, tachypnea, apnea, pallor, jaundice, sclerema, purpura ,all neonates were investigated as follows

Sepsis screen:

1) TLC count was done with leucopenia<5000/cmm was considered positive
2) Peripheral smear in which toxic granules were identified and its percentage was calculated
3) Micro-esr values more than 15mm at the end of 1st hr was considered as positive
4) CRP
5) Blood culture : 0.5ml of blood was collected in 5ml of glucose broth,this broth was subjected to 3 subcultures and observed after 24,48,120hrs,if no growth was observed after 5 days culture was reported as negative

OBSERVATION AND RESULTS

Table No.1: Distribution Of Cases According To Sex

SEX	MALE	FEMALE	TOTAL
No. of cases	33	17	50

Male babies were more affected by neonatal septicaemia than female babies

Table No.2: Distribution Of Cases According To Age Of Onset Of Septicemia

Age of onset	<7days	>7days	Total
No.of cases	34	16	50

Early onset septicaemia was more common than late onset septicaemia

Table No.3: Distribution Of Cases According To Birth Weigh

Birth-weight	<2000gm	>2000gm	Total
No.of cases	34	16	50

Septicaemia was more common in low birth weight newborns <2000gm

TableNo.4: Distribution Of Cases According To Gestational Age I.e ., Maturity

Maturity	Preterm	Full term	Total
No.of cases	30	20	50

Preterm babies were more affected by septicaemia than full term babies

DISCUSSION

Table 1 shows distribution of cases according to 33(66%)male babies and 17 (34%)female babies were affected by neonatal septicaemia.

Nelson stated that males have an approximately two fold higher incidence of sepsis than females.

Piyush gupta et.al.observed male predominance in neonatal septicaemia.

N.somu et.al,Philip et.al.observed that males were affected more than females

H.david Wilson stated that increased incidence of sepsis neonatorium in male infants is related to higher incidence of congenital anomalies of urinary tract in the males,resulting in primary UTI and secondary sepsis.

Table 2 shows distribution of cases according to age of onset of septicaemia. Early onset is seen in 34(68%) cases and late onset in 15(32%)cases Piyush gupta et.al found that 76.4% cases occurred in<7 days of birth (early onset) T.vesikeri et.al reported early onset in most of patients with neonatal sepsis.

Khatua et.al.observed that 70% cases developed early onset septicaemia.

Table 3 shows distribution of cases according to birth weight ,low birth weight <2000gms was present in 34(68)cases.

Nellain et.al, N mehrotra et.al, piyush gupta et.al, agarwal et.al, khatua et.al,observed that low birth weight new born have higher incidence of neonatal septicaemia Nelson and cloherty stated that low birth weight was the single most important factor in neonatal septicaemia.

Table no.4 show distribution of cases according gestational age 30(60%) preterm babies were affected.

Anand et.al observed that 62% preterm babies were affected, khatua et.al observed that 56.2% pre term were affected.

Fanaroff et.al, piyush gupta et.al found that pre term babies were more affected than full term babies by neonatal sepsis.

Higher incidence of many complications of labour and resuscitation are more common in preterm babies than full term neonates,preterm babies are relatively immune-compromised and immune inexperienced. These factors pre dispose them to infection.

CONCLUSIONS

1) clinical features of neonatal septicaemia are non specific and vague,may be clinically indistinguishable from those occurring in non infectious condition during neonatal period.

2) Male,preterm and low birth weight neonates are more prone for septicaemia

3) Early onset septicaemia is more common than late onset septicaemia

4) Prolonged rupture of membranes, home deliveries,poor maternal health and poor hygiene of genitals predispose neonate to infections.

5) Gram negative septicaemia is more common than gram positive septicaemia.

6) Gram negative septicaemia is more common in low birth weight babies and cause of early onset septicaemia.

8) Sepsis screen has good sensitivity,specificity and positive predictive accuracy and is valuable aid in early diagnosis of neonatal septicaemia.

9) Sepsis screen is simple,cheap,less time consuming and easy to perform even at bedside.

10) As an individual test CRP has highest sensitivity,specificity and positive predictive accuracy.

11) Mortality is higher in low birth weight and preterm babies.

12) Mortality is higher in early onset and gram negative septicaemia.

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