MEDICAL CHANNEL

Original Article

OUTCOME OF KLEBSIELLIA PNEUMONIAE SEPSIS AMONG NEW BORNS

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ABSTRACT:

Objectives: To observe frequency of klebsiellia pneumonia in septicemia newborn
Methodology: Study was conducted in Shaheed Muhterma Benazir Bhutto Medical College Karachi with collaboration of Dept. of pediatric Lyari general Hospital (LGH) a tertiary care hospitals of Karachi. Blood samples for culture were collected from 115 newborn admitted in NICU with suspected septicemia. Specimens were inoculated in brain heart infusion broth in ratio of 1:5. Subcultures were plerformed at 24 hours, & 2 hours and on the 7th day. Isolates were identified by standard methods.
Result: A total of 77 organisms isolated out of 115 samples. These includes gram negative (50/70) and gram positive (27/77). Klebsiella were 22, Staphylococcus aureus were 13 Staphylococcus epidermidis were 12, Proteus mirabilis 7, Enterobacter 6, pseudomonas 6, Escherichia coli 5, Acinetobacter 3, Citrobacter 2, and Staphylococcus Saprophyticus 1.
Conclusion: In the view of Septecemia in neonates klebsiella pneumonia tend to show a higher frequency.

Key words: Klebseillia, Newborn, Septicemia

INTRODUCTION:

Sepsis is a common cause of morbidity and mortality among neonates worldwide [1]. It contributes to 6 million deaths per year and nearly accounts for 40% of death in first weeks of life. Its incidence in developed countries varies from 1-10/1000 live births, where as it is 3 times more common in developing countries [2]. Most common bacterial organism s responsible for early onset

Neonatal sepsis in developing countries like Pakistan , India Nigeria, Bangladesh, are Escherchia coli (E coli), klebsiella, Staphlococcus aureus (S.aureus), [2].

Invasion of the blood steams by microbes may lead to serious immediate consequences, including shock,multiple orgon failure and disseminated intra vascular coagulation (DIC) and death [3].

Sepsis with gram negative microorganisms is increasingly reported nowa days particularly in Asian Conteries [4]

Neonatal infections in hospital born babies at higher risk due to poor intarpartum and postnatal infection control practices [5]. In the community about 50-88% of all neonatal death are due to infectious causes and 22% to 66% of all admission in neonatal unit is due to infection including septicemia and pneumonia [6].

The immaturity of immune system, specially phagocytic and hormonal immunity, predisposes children to an increased incidence of sepsis caused by bacteria [7].

There is a substantial increase in the incidence of septicemia during the last decade, particularly in developing countries. However, septicemia in children tends to present

with non specific clinical features and those clinical features found useful in one region may not necessarily apply to another region because of difference in disease epidemiology. Causative organism also vary from place to place. [8]

MATERIAL AND METHODS:

The study was performed in department of pathology, Shaheed Mohtrama Benazir Bhutto Medical College Karachi.

A total of 115 neonates with suspected septicemia were included, Blood samples were collected aseptically through cleaning of venous site with 70% alcohol and subsequently followed by iodine. The used needle was replaced and then venous blood was injected into brain heart infusion (BHI) broth is ratio of one par of blood to five parts of broth. Blood culture bottles were incubated at 37C for 7 days. Three subcultures were made at 24hours, 72 hours and on the 7th day on MacConkeys agar (MA) and blood agar (BA) incubated at appropriate temperature and atmosphere according to standard procedure. The colonies isolated were identified by their colonial morphology, gram's stain and conventional biochemical tests [9].

RESULTS:

Out of 115 samples of suspected septicemia 77 (66.95%) obtained with growth of bacteria. The incidence of gram positive and gram negative bacteria organisms were 50/77 (64.93%) and 27/77 (35.06%) respectively (table I). Table II shows total positive organisms which were isorated in which Klebsilla species were more than all positive isolated organisms, that stons. The increased pregnency of Klebsilla in seplicinic new born.

DICUSSION:

The most frequent isolates in blood culture of neonates with suspected septicemia in hospitals was kelbsiellia Pneumoniae.

The present study was conducted to determine the frequency of septicemia due to klebsiellia pneumonia. In our study a total of 115 blood culture were examined and 77 samples were positive. Present study supports this finding that most common etiological agent of septicemia in neonates is klebsiellia pneumonia. In a study (10) reported that klebsiellia was predominant pathogen in 29% of cases. [11] repoted that klebsiallia was the most common cause of neonatal sepsis in Karachi Pakistan. [12] from india reported Gram negative sepsis by klebsiallia pneumonia is 30.4%

Most of gram negative bacteria belong to enterobacteriaceae family. Majority of authors have reported the gram negative bacterial preponderance, specially Entereobacteriaceae as the case of sepsis in neonates such as [13] who reported gram negative bacteria as 80% of the cases and [14] reported 67.7% gram negative bacterial. [15] who also found Klebsiellia constituted for 22.22% which is also a close agreement with our study.

[16] was also found klebsiellia (47.14%) as the leading cause of septicemia [17]. Who reported kelbsiellia as 39.41%and according to Ghansham and Al [18] septiciamia caused by klebsiellia is 33.8%. murty and gyanesh [19] also reported kelbsiellia specie being the most common (39%).

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TABLE I:

Distribution of the Gram negative organisms

Total specimens	Positive specimens	Gram positive	Gram negative
115	77 (66.95%)	27 (35.06%)	50 (64.93%)

TABLE II:

Distribution of organisms isolated according to percentage

Isolates	Number	Percent
Klebsilla species	22	28.57%
Proteus mirabilis	7	9.09%
Enterobacter	6	7.79%
E-coli	5	6.49%
Psedomonas species	6	7.79%
Acinetobacter	3	3.89%
Citrobacter	2	2.59%
Staphylococcus aureus	13	16.88%
Staphylococcus epidermidis	12	15.58%
Staphylococcus saprophyticus	1	1.29%

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