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The Significance of Septic Arthritis in Neonatal Intensive Care Unit

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Editorial

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Editorial

Introduction and Rational

Septic arthritis is not a common manifestation of neonatal infection and is always overlooked. It is rarely detected or may be passed unnoticed if accompanied with other overwhelming symptoms and sign of septicemia as respiratory distress, abdominal distension, cholestasis, irritability, fever or other neurological manifestation. Other cause may be participated in the uncommon diagnosis of septic arthritis is the paucity of sign and symptoms which make diagnosis more difficult than older infants and children. Clinical signs are early misleading with those of septicemia, but later a painful leg, pseudo paralysis, lack of movement, uneasiness and refusal to be fed or drink may be encountered. Early diagnosis and management may influence the course of septic arthritis and prevent disabilities [1].

Research Question: Is neonatal septic arthritis a common problem in neonatal intensive care units (NICUs)??

Objectives: To determine the magnitude/significance of septic arthritis in the studied NICU.

Aim of work

1. Study the percentage of arthritis/Osteomyelitis in NICU
2. Early diagnosis of neonatal arthritis among neonates with septicemia and or those exposed to invasive technique.
3. Identification of risk factors as prematurity, respiratory distress syndrome and perhaps most important: umbilical artery catheterization, sampling technique and type of organism.

Patient and Methods

The study population included newborn infants with infection/sepsis, who were admitted to NICU of AL Zahra, University hospital, Faculty of Medicine for Girls. It is a retrospective study. The total number of admitted cases during the studied period was 1516 newborn infant. The total number of cases diagnosed as neonatal infection /sepsis weather early, late or hospital acquired infection was 395,(26.05% from total admission), with 9 cases (0.6% from total admission)were diagnosed as septic arthritis. All the medical records were reviewed for prenatal, natal and postnatal history and examination. These included the demographic data, Apgar score as well as resuscitation details and risk factors(type and site of parental fluid and samples collection, extravasations of fluid, birth trauma), diagnosis of infection, type of infection ;intrauterine/congenital infection, early infection, late and nosocomial infection.

The onset of joint involvement, type of joints and number of joint affected was recorded as well as general and local symptoms by the principal investigator and the researchers.

Laboratory results as blood picture, C-reactive protein, blood glucose , blood gases, electrolytes, hepatic function tests, renal function tests, bleeding time, coagulation time, prothrombin time , partial thromboplastin time , bacteriological study for blood /or other specimens were documented. Radiological studies result of joints and bones X rays and Ultrasound images

were also recorded. The data was tabulated and computerized for analysis and further evaluation. All patients were treated according to their need [2].

Results

The total cases diagnosed as neonatal infection was 395 cases. Group I included neonatal infection/sepsis cases without arthritis; 386 newborn infants (97.8%), while group II neonatal infection/sepsis with arthritis included9 cases which forms (2.2%) of the total cases of neonatal infection. These cases showed clinical, radiological symptoms and signs of arthritis. Among sepsis group without arthritis there was15 cases came with false symptoms of arthritis as inability to move limbs, pain, and tenderness but there was no radiological or ultrasonographic feature of arthritis even with further re-evaluation. The prognosis was good [3].

There was significant decrease in gestational age ,birth weight as well as lower Apgar score at 10 m among sepsis group with arthritis than sepsis group without arthritis , P 0.02 , 0.03 and P 0.009 subsequently, but postnatal age was higher in sepsis group with arthritis , P value =0.048.

In the arthritis group, 7 cases (77.7%) came after hospital discharge suffering from inability to move the limb; the other 2 cases were detected while stayed in our NICU. The clinical symptoms and signs revealed limitation of movement and pain with motion among all cases (100%), then swelling of the joints was detected in 8 (88.9%) cases followed by irritability among 7 (77.8 %) cases. Six (66.7%) cases presented with fever too. Single joint involvement was seen in 7 cases (77.8%) and multiple joint among 2 cases (22.2%).The multiple joint included hip and knee in one case and hip and small joints of hand in the second case. Hip joint was most commonly affected joint in 55.6% of cases, then knee joint in 33.3% followed by shoulder, wrist and small joints in 11.1% of cases. Radiological picture showed evidence of increased joint space among all cases (100%) and soft tissue swelling among 7 cases (77.8%).Residual damage was seen in 2(22.2%) cases. There were multiple risk factors among each case, including prematurity, use of intravenous fluid, venipunctures and extravasations of fluid. Gender was not risk factor in this study.

Conclusions

Neonatal septic arthritis is not common feature of neonatal infection/sepsis. The most important leading criteria were parent's complaint; that was inability to move limb. Clinical evaluation is superior to laboratory findings in diagnosis of septic arthritis as laboratory findings are like those findings of sepsis group. Good X-ray films were important diagnostic test for septic arthritis, as well as joint sonogram. Anticipation, early prediction means early medication and avoidance of joint destruction [1,3].

Recommendation

We recommend through clinical examination for all newborn infants suffering from neonatal infection, including frequent joint examination. A high index of suspicion and the use of imaging modalities are useful in making an early diagnosis. Radiological and sonographic studies should be repeated if no initial evidence if clinical manifestations were persistence.

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