Nosocomial cytomegalovirus infection in neonatal intensive care unit in benha university hospital

Mohamed Ibrahim Abd El Fattah

CMV is the most common cause of congenital and perinatal infections. Congenital disease occur in about 0.4 to 2.3% of neoborns.Most infections are asymptomatic at birth but later on 10% to 20%develop handcaps, mainly neurological disturbances.Nosocomial acquisition of CMV by infants in day care centers,nurseries and hospitals have been reported. The risk of nosocomialtransmission of CMV from infected patients to other patients, householdcontacts or medical personnel is controversal .The aim of the present work is to study the prevalence of CMVinfection in NICU in Benha University Hospitals, to detect possiblenosocomial transmission of CMV infection and determine possible riskfactors for neonatal CMV infection.This study was carried on 194 subjects. They were classified into 2groups:Group I: Consisted of 175 neonates in NICU. They were classifiedinto 3 subgroups :Group I (A): Consisted of 10 neonates with congenital CMV infection.Group I (B): Consisted of 12 neonates with perinatal CMV infection.Group I (C): Consisted of 153 neonates without evidences of CMV infection.Group II: Consisted of 19 employee in the same unit.All neonates were subjected to thorough history, clinicalexamination and laboratory investigations that include complete bloodpicture, total and direct serum bilirubin and renal function tests.Employee in NICU were subjected to thorough history and clinicalexamination.All members of the study were investigated for serum CMV-IgGand IgM by ELISA technique and CMV -DNA by PCR.The results obtained showed that from 175 neonates in NICU inBenha University Hospital. The overall prevalence ofCMV was 12.57%,10 (5.71 %) had congenital infection, while 12 (6.86%) had perinatalinfection.In neonates with congenital CMV infection the prevalence ofbreast milk feeding, congenital anomalies and blood transfusion were80%, 30% and 60% respectively. Mortality rate among them was 20%.In neonates with perinatal CMV infection the prevalence of breastmilk feeding, congenital anomalies and blood transfusion were 75%,16.67% and 50% respectively. Mortality rate among them was 16.67%.On the other hand from 19 employee, 2 (10.53%) were CMV-DNApositive by PCR, non of them was CMV-IgM positive and all of themwere CMV-IgG positive.By using stepwise multiple logestic regression analysis, the riskfactors related to CMV infection among neonates in NICU were, lowbirth weight, congenital anomalies and breast milk feeding, while CMVinfection among employee was related to blood transfusion andemployment period.In our results there was no correlation between neonates in NICUand employee in the same unit.from this study it could be concluded that:1-

CMV infections are more prevalence in premature and low birthweight neonates in NICU.2- Neonates fed on breast milk are more brone to CMV infection.3- The use of conventional blood may transmit CMV.4- No evidence of nosocomial CMV transmission to employee IIINICU.RECOMMENDA nONS:1- Strict preventive measures for CMV transmission must be done forall neonates especially prematures and low birth weights.2- Breast milk from known CMV positive mothers or toddlers mustbe avoided or pasteurized before used.3- CMV must be suspected in neonates suffering from fever,hepatosplenomegaly, congenital anomalies, anemia and orthrombocytopenia.4- Blood transfusion should be limited, only CMV screened blood isused. Recent trends of using packed RBCs, platelets, plasma orleukodepleted blood must be widened.5- Screening of hospital employee for CMV is still costly but may berecommended especially for persons with close contact to high riskpatients.6- Follow up of CMV infected neonates to evaluate and possibly treatthe sequelae of infection at older ages..7- Although nosocomial transmission of CMV is not proven in thepresent work, it is clear that, CMV constitute a problem amongneonates in NICU. So, workers and employee in the unit must beinformed about the dangers, mode of transmission and preventivemeasured of CMV infection, especially those in childbearing age.8- Large scale studies on another places in the hospital dealing withhigh risk groups of patients such as hemodialysis unit, oncologyunit, transplantation unit etc., so as to identify its role innosocomial transmission ofCMV.