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Assessment of coagulation profile, fibrinogen, protein C, protein S, antithrombin, and vitamin K levels among Sudanese neonates with proven sepsis in Omdurman Maternity Hospital, Sudan

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Aim: Neonatal sepsis is lethal disease represents one of the most common causes of neonatal morbidity and mortality worldwide. Aim of this study is to assess platelets count, prothrombin time (PT), activated partial thromboplastin time (APTT), thrombin time (TT), fibrinogen, protein C, protein S, antithrombin (AT) and vitamin K (VK) in Sudanese septic neonates and compare them with healthy neonates in order to study hemostatic alteration among septic neonates.

Methods: Prospective study was conducted in Omdurman Maternity Hospital in the period June 2013 to April 2015 on total of 100 samples divided into case and control group (50 for each). Blood culture was done routinely for all neonates with suspected sepsis; the first 50 neonates with a positive culture were taken as case group. Platelets were counted by cell counter haematology analyzer Sysmex KX-21. PT, APTT, TT, fibrinogen, PC and PS were assessed by clotting procedure via coagulometer Stago Start four. AT assessed spectrophotometrically by turbidimetric method via chemistry analyzer Mindray BA-88A. VK assessed by the Schmiation.10 ADVP. Data were tabulated; means were compared and analyzed by SPSS20 via one sample t test.

Results: In case group, 17 neonates underwent early onset sepsis (0-7 days) and 33 late onsets (7-28 days). In the outcome, 10 neonates were died. Means of platelets count, PT, APTT, TT, fibrinogen, PC, PS, AT and VK were 60,289 c/mm³, 16.6 s, 47.8 s, 18.6 s, 482.2 mg/dl, 34.4%, 33.4%, 183.9 mg/ml and 0.86 ng/ml; and 212,030 c/mm³, 13.9 s, 37.5 s, 20.6 s, 393.7 mg/dl, 36.8%, 34.7%, 221.5 mg/ml and 1.23 ng/ml for case and control respectively.

Conclusions: Platelets count significantly decreased, PT and APTT significantly prolonged, TT significantly shorted, fibrinogen significantly increased and AT significantly decreased in neonatal sepsis. APTT and PC showed significant correlation with outcome, so both can predict early mortality, PT and TT showed significant correlation with early sepsis.

Biography

Albara Abdulfatah Mohammed has completed his PhD at University of Khartoum, Sudan; BSc and MSc at University of Medical Sciences and Technology. He is the Coordinator of Medical Laboratories Sciences Program at Alfajr College. His research interest is in Hemostasis.

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