Neonatal arrhythmias

Rania Aly Abd El Salam Hegazy, Fadia Mahmoud, Nadia Badawi, Wael Lotfy, Cairo University, Giza, Egypt

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Abstract

Arrhythmias occur in 1 to 5% of all newborns. Most of them are benign, however others are non-benign and impose a life endangering threat to the newborn. Understanding the normal range of the 12 lead ECG and the Holter monitoring in neonates allows accurate interpretation, proper diagnosis and management of neonatal arrhythmias. The present work, a random, interventional, analytic, cohort study, included 457 newborns (52.7% males) with a confidence interval of 95%. The study population had gestational ages ranging from 29 to 41 weeks (average 35 weeks) and postnatal ages ranging from 3 to 28 days (average 10 days). All babies were offered a diagnostic workup for suspected arrhythmias. A case report form of detailed maternal and neonatal history and examination was filled out. A twelve lead ECG was done for every neonate. A total of 139 Holter monitorings were done. The normal ranges of 12 lead ECG and Holter monitorings in Egyptian neonates were described and correlated to the gestational age. Benign arrhythmias were identified in 8.5% (n=39) and non-benign arrhythmias in 1.5% (n=7) of the study population. Maternal smoking and neonatal HIE were significantly positively correlated to the occurrence of benign arrhythmias among newborns as diagnosed on 12 lead ECG. A heart rate persistently above 180 bpm appears to be the most reliable cut off value to define neonatal tachycardia that warrants search for a primary cause. The presence of high umbilical arterial catheter, hypoxic ischemic encephalopathy, and using nebulizer therapy to which salbutamol was added higher leucocytic counts were identified as risk factors for the occurrence of benign arrhythmias on Holter monitoring. All non-benign neonatal arrhythmias presenting during the study period were reported. A total of 16 cases were diagnosed. Their clinical presentations, lines of therapy and outcome were discussed. SVT is the most common non-benign arrhythmia among newborns. It usually presents with congestive heart failure.

Keywords

Arrhythmias, Neonates, Congestive heart failure, SVT,