

## MP1-9

### **Adapting Pulse Oximetry Measurements for Early Detection of Critical Congenital Heart Disease in Early Neonatal Period.**

*Petropoulos A., Fritsch P., Ehringer- Schetitska D., Herceg - Cavrak V., Jakab A., Hidvégi E., Oberhoffer R.*

*Working Group "Prevention" of AEPC*

Introduction: The prevalence of Congenital Heart Disease(CHD) is worldwide 1% of all living births. 25% of them will suffer from critical CHD (c-CHD). Common examples: transposition of great arteries, tetralogy of Fallot, tricuspid valve atresia, pulmonary valve atresia, truncus arteriosus, total anomalous pulmonary venous drainage, critical aortic valve stenosis, severe coarctation of the aorta, interrupted aortic arch and hypoplastic left heart syndrome. These patients need early detection and surgical treatment in the first month of life. As fetal echocardiography is limited to significant indications and pre discharge from maternity wards physical examination carries a significant false negative diagnosis any new screening test for detecting c-CHD is vital.

Aim: of this paper is to draw the awareness of the medical practitioners that deal with neonates on the benefits of pulse oximetry measurements both pre and post ductal after the first day of life to detect c-CHD. Additionally, we are in the process of creating guidelines for the use of this test as a screening test in the early neonatal period.

Method: Review of literature on the subject.

Results: This test has been used today in many countries around the world. USA and China are among those. In Europe only a few countries have adopted it as a screening test. Others are running national studies to detect its use.

Discussion: The sensitivity of the test has been reported in various large multicenter studies to range from 63 -83% and the specificity from 97.9-99.83%. From the false positive detected cases, approximately :41% had other cardiac congenital or acquired diseases, 14% suffered from primary sepsis, 10% from respiratory disease. Pulse oximetry screening seems to be a very valuable screening test to detect c- CHD and other serious morbidities in early life. It's cheap and handy use must be encouraged by national legislation globally and our near future guidelines can assist this task.