Microarray testing for symmetrical intrauterine growth retardation

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Background: Intrauterine growth restriction (IUGR) is the most common risk factor associated with perinatal mortality after excluding congenital anomalies 1. IUGR refers to a fetus that has failed to achieve its genetically determined growth potential and affects up to 7–10% of pregnancies 2. Fetal growth restriction is associated with an increase in perinatal mortality and morbidity. This is because of a high incidence of intrauterine fetal demise, intrapartum fetal morbidity, and operative deliveries. Neonates affected by IUGR suffer from respiratory difficulties, polycythemia, hypoglycemia, intraventricular hemorrhage, and hypothermia 3,4,5.

Objective: 1. Primary objectives: to evaluate the results of Microarray in symmetrical IUGR babies. 2. Secondary objectives: to compare between microarray positive babies and negative babies regarding: gestation age, weight, Apgar score, need and indications for NICU admission as well as length of NICU of stay.

Result: Between Jan 2016 and December 2017 total 10,695 babies were born. Among that 578 babies were IUGR (501 asymmetric and 77 symmetric IUGR). Total 71 babies were taken in our analysis after excluding 3 down syndrome and 3 babies part of multiple pregnancy. Microarray test had positive findings in 14/71 (19.7%). There were copy number changes of unknown significance in 8/71 (11.2%)

Conclusion: Most of the microarray test results were copy number changes of unknown significance which is comparatively much higher than reported prevalence. Microarray positive IUGR had comparable NICU admissions to negative result group but their duration of stay, initial lower apgar scores and thrombocytopenia was significantly higher. This may be because, even copy number changes has unknown significance, they may have some clinical effect which is not known till now and may need further studies and long term follow up for those cases.

Keywords: Intrauterine growth restriction (IUGR), Chromosomal microarray analysis (CMA), Neonatal intensive care unit (NICU)

Abbreviations and Acronyms: Intrauterine growth restriction (IUGR), Chromosomal microarray analysis (CMA), Copy-number variants (CNVs), Toxoplasmosis, rubella, cytomegalovirus, rubella (TORCH), Neonatal intensive care unit (NICU), variant of uncertain significance (VUS).

Biography

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