conferenceseries.com

3rd International Conference on

TRANSCRIPTOMICS October 30-31, 2017 Bangkok, Thailand

Reference ranges of standard amino acids in disease free neonatal population of northern Pakistan

Asif Khan Rawalpindi Medical College, Pakistan

Objective: To establish the reference ranges of standard amino acids in disease free neonatal population of northern Pakistan.

Place & Duration of Study: Study was conducted in AFIP Rawalpindi from September 2015 to May 2016.

Material & Methods: This was a descriptive cross sectional study carried out at military setup. The sampling technique was non probability random convenient. The calculated sample size was 100 and the study was completed in 1 year after approval. A total of 100 disease free neonates were included according to our inclusion criteria. Neonates with neurodevelopmental delay, with previous history of inborn errors of metabolism, neonates showing failure to thrive and those receiving drugs like; paracetamol, valproate and antibiotics and subjects with increased ammonia, pyruvate and lactate levels were excluded from the study. 2-3 ml fresh blood sample were collected in 0.5 ml lithium heparin containing tube. The sample was immediately transported to laboratory on dry ice then it was centrifuged at 3500 rpm for 5 minutes. 100 ul of plasma and 100 ul of sulfosalisylic acid (10%) was mixed, then vortex the mixture for 15 seconds and placed at 4 for 1 hour. Centrifuge this mixture at 10000 rpm for 5 minutes. A clear supernatant was obtained which was then filtered by 0.2 micron into a G.C vial. Then the sample was loaded onto the amino acid analyzer for quantitative determination of amino acids. Next step to the sample preparation is the amino acids analysis which was carried out by a dedicated high performance liquid chromatography amino acid analyzer (Biochrom 30+ AAA uk). In this instrument the mixture of buffer containing lithium citrate when loaded to the sample containing mixture of amino acids will be eluted in the cation exchange resin followed by a reaction with ninhydrin reagent (derivatizing agent), a purple and yellow color complex is formed which is detected by 440 nm and 570 nm wavelength. Amino acids which contains secondary amino group like proline and hydroxyprolin is detected at 440 nm and rest of the amino acids are detected at 570 nm wv. Then sample is collected and analyzed and data analysis by spss.

Results: Of the 100 neonates meeting the inclusive criteria 53 (35%) were male and the remaining 47 (47%) females. Results show most of the amino acids below the reference ranges provided by the manufacturer of the instrument.

Conclusion: In conclusion, we became able to establish reference ranges of plasma standard amino acids in healthy neonates with IEC by ninhydrin post-column derivatization. The reference intervals derived in the present study may be useful when applied to the diagnosis and monitoring of therapy in patients with a particular metabolic disease in neonatal population. There are some pre analytical variables that affect the plasma amino acids analysis like: hemolysis, icterus, buffy coat contamination and delayed transportation. They interfere with the quantification of amino acids by ion exchange chromatography.

Biography

Asif Khan Completed his post graduation in Rawalpindi Medical College, Pakistan

k_asif74@yahoo.com

Notes: