

11. Tandem mass Spectrometric analysis for aminoacids, Organic acids and fatty Acid disorders in Critically ill Newborns from Indian NICU.

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Background: There is no Indian data available for cutoffs, especially in critically ill newborns. It is estimated that 5 % of NICU babies will show abnormal markers.

Methods: A prospective study was done over a period of last 2 years. 60 critically ill newborns 46 males and 14 females were selected with age group ranging from 0 – 90 days (mean 18.18 days). All the patients were tested in duplicate. The parameters tested were Total Carnitine, Free carnitine, Acyl carnitine (C2 – C18) and 10 different aminoacids on TMS. For the purpose of calculation of normal ranges 6 abnormal patients were not considered and a mean, SD and Cut-offs (Mean + 3 SD) were calculated from the data of 54 patients. Cut-off is taken as Mean + 3 SD as it corresponds to 99th Centile and is minimum cut-off applicable.

Conclusion: Of these 60 babies, 6 had Inborn Errors of Metabolism (one each had MMA, GA Type II, Hyperleucinemia, UCD, Hypermethioninemia and MSUD).

Reference: Thomas H Zytkovics et al, tandem Mass Spectrometry Analysis for Amino, Organic and Fatty Acid disorders in Newborn DBS, Clinical chemistry 47 : 11, 1945 – 1955 (2001)