P-184 - OBTAINING A PHENYLALANINE CUT OFF FOR SAMPLES TAKEN BETWEEN 24 AND 36 HOURS OF LIFE

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**INTRODUCTION:** Determining a cut-off value is a crucial stage when starting the newborn screening, since the number of false positives must be reduced without compromising sensitivity. The cut offs are usually established at 36-72 hours of life, however is increasing the number of samples taken before that range, resulting in patient recall. **OBJECTIVE:** To calculate a new cut-off value for Phenylalanine (Phe) and Phenylalanine/Tyrosine ratio (Phe/Tyr), in a cohort of patients whose samples were taken between 24 and 36 hours of life and to compare it with the current one established at 36 -72 hours of life. **MATERIALS AND METHODS:** We analyzed 638 dried blood samples from full term newborns with breastmilk feeding, obtained between 24 and 36 hours after birth. The quantification of Phe was performed in an API3200 tandem mass spectrometer (ABSciex) using non-derivatized MassCheck reagent (Chromsystems). The mean, the standard deviation and the 99.9 percentiles of the results (Phe and Phe/Tyr) were calculated. There were compared with those published in Region 4 Stork (R4S). The cut-off value was considered clinically validated if it was between the P99 of the normal population and the P5 of the true positive cases for Phe reported in the R4S and between the P25 and P75 of the distribution of cut-off values for Phe reported in the R4S. **RESULTS:** Phe: Mean = 50.1 uM, SD = 9.46, P99.9 = 91 Phe/Tyr: Mean = 0.4, SD=0.19, P99.99= 2.15. Validation: Phe: Cut off = 91 uM, P99-P5=97-233, P25-75=113-150; Phe/Tyr: Cut off =2.08, P99-P5= n-3.4, P25-75=1.6-2.5; Current cut off values: Phe=115.30 uM; Phe/Tyr=1.77 **CONCLUSION:** The cut off values obtained are different from those calculated in the cohort whose sample was taken between 36 and 72 hours of life. When analyzing the results, we observed that the clinical validation criteria are not met for Phenylalanine; reason could be differences in the hours of life of the samples from the database. These new cut off values could be used for samples taken between 24 and 36 hours of life, avoiding recall these patients.