O-019 - HEMATOCRIT AN UNCONTROLLABLE VARIABLE IN NEWBORN SCREENING?

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Dried blood spots (DBS) are valuable samples for newborn screening laboratories. Although there are many advantages in using these materials, the hematocrit parameter remains an uncontrollable variable. Cutoff values for newborn screening determinations are based on an average hematocrit value (55%). ***OBJECTIVE:*** to study the hematocrit variable influence on neonatal screening results and analyze the impact on outcomes. We analyzed 1124 samples from 2 newborn screening laboratories (CEMIC-Hospital Garrahan), from preterm and term infants (gestational weeks 25-41), with or without hospitalization. Using 3.2mm punch in a plate with Sodium Lauryl Sulfate (1.7 g/L) to calculate the hemoglobin value(spectrometry method) and applying a factor of 3.2 hematocrit was estimated. We design typical curve and 3 controls. 114 values of neonatal blood counts corresponding to the date of extraction of the DBS, the method was compared (R2: 0.9143). TSH, Immunoreactive Trypsin (IRT) and 17OHProgesterone determinations were performed with MPBiomedicals and Perkin Elmer(DELFIA) reagents. Results were evaluated without and with hematocrit correction. Patients who exceed the cut-off value were recited for a new confirmatory sample. 183 samples (without correction) exceeded the cut-off value proposed by each laboratory: 49 for TSH; 44 for IRT; 90 for 17OHProgesterone. Three confirmed pathological patients were included. Using the hematocrit estimation, only 18(36.7%) of 49 patients who exceeded TSH cut-off value without estimation had to be recalled; IRT 25(56.7%) of 44 patients and for 17OHProgesterone 39(43.3%) results from 90 patients were higher than cut-off without estimation. Pathological samples continued to exceed the cut-off value. If hematocrit correction had been used, only 82(44,8%) patients would have been recalled, due to a lower percentage of the DBS globular package. The average of hematocrits the 82 samples was 50.3% and median 51.5%, 101 samples that did not exceed the cut-off value, mean 39.9% and median 41.6%. The estimation of hematocrit would allow the correction of volume in the DBS sample, being this very simple to calculate. We suggest the use of hematocrit estimation for samples that exceed the cutoff value. Lowering the percentage of recitations would avoid the anguish that causes to the family the recalling for confirmation for false positive results.