RELATIONS OF O2 SUPPLEMENTATION TO BLOOD SERUM INSULIN-LIKE GROWTH FACTOR-I IN THE NOT-LIFE-THREATENED HUMAN NEWBORN; ROLE OF ORAL-ENTERAL CALORIC INTAKE BEYOND AXILLARY TEMPERATURE.

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Introduction.

Human newborn (NWB) respiratory derangements may be concomitant to oral/enteral calorific intake (KOE) insufficiency. We evidenced a possible involvement of axillary temperature (TEMP) in relationships between preterm birth (PTB) and blood serum Insulin-like Growth Factor-I (IG1) in NWBs. Here we evaluate the TEMP-independent role of birth gestational age (GA) and KOE in relations of O2 supplementation in respiratory gases (O2S) to IG1 in the not-life-threatened NWB.

Methods.

NWBs with any among total parenteral nutrition, parenteral nutrition other than dextrose, blood component transfusion, postnatal corticosteroid treatment, therapeutic hypothermia, life-threatening disease, diabetes mellitus (DM), endocrine diagnosis out of DM, malformation, and mother with DM were excluded. Each of 78 included NWBs had complete data availability for 1) same-day records at one of the first 5 postnatal days (x), 5 days after x (y) and 10 days after x (z) of postnatal age (PNA, unit: day), TEMP (unit: °C), total calorific intake (K) and KOE (KOE, unit: kcal/kg body weight/24hrs), pulse oximetry (SpO2, unit: %), O2S, and IG1 RIA measurements (unit: uM/dl), and for 2) gender (SEX), GA (unit: complete week; range=28–42), BW (unit: g; range=1200–4150), and SpO2M (range=87.3–100.0), and 2) percents of KOEM over KM (i.e., (KOEM through KM)x100), KOEM%KM; range=24.5–100.0). IG1M normal score according to van der Waerden (IG1M-NS) resulted near-normally distributed. Multiple Linear Regression (MLR) was used for analyses (MLR computations; male SEX, SGA, O2S at x (O2Sx), condition absent=0, condition present=1)(numerosity; male SEX, 43; SGA, 20; O2Sx, 22).

Results.

Partial correlaton coefficient (pcc) for partial correlation between O2Sx and outcome IG1M-NS was significant in MLR models bearing, as predictors, 1) SEX, SGA, PNA, TEMPM, KM and O2Sx (pcc, r2: -.391, p=.001) or 2) SEX, SGA, PNA, TEMPM, KM, O2Sx and SpO2M (pcc, r2: -.379, p=.001) but not 3) GA and/or KOEM%KM in addition to SEX, SGA, PNA, TEMPM, KM and O2Sx or 4) GA and/or KOEM%KM in addition to SEX, SGA, PNA, TEMPM, KM, O2Sx and SpO2M (MLR R2:.351-.550, always significant).

Conclusions.

Factors related to GA and/or to KOEM%KM may be related to O2Sx - IG1M-NS relations after control for TEMPM in addition to SEX, SGA, PNA, TEMPM, KM, and SpO2M.