

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 caloric 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 caloric intake(K) and KOE(K, 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), GA≤36(PTB, n=46), BW(unit:g; range=1200–4150), BW≤10.th centile for GA(SGA). We calculated: 1) averages over x-y-z times (i.e., (x+y+z)/3) for TEMP(TEMPM; range=36.1-37.0), IG1(IG1M), K(KM), KOE(KOEM), and SpO₂(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(O₂S_x), condition absent=0, condition present=1)(numerosity; male SEX, 43; SGA, 20; O₂S_x, 22).

Results.

Partial correlation coefficient (pcc) for partial correlation between O₂S_x and outcome IG1M-NS was significant in MLR models bearing, as predictors, 1) SEX, SGA, PNA, TEMPM, KM and O₂S_x (pcc, r²: -.391, p=.001) or 2) SEX, SGA, PNA, TEMPM, KM, O₂S_x and SpO₂M (pcc, r²: -.379, p=.001) but not 3) GA and/or KOEM%KM in addition to SEX, SGA, PNA, TEMPM, KM and O₂S_x or 4) GA and/or KOEM%KM in addition to SEX, SGA, PNA, TEMPM, KM, O₂S_x and SpO₂M (MLR R²:.351-.550, always significant).

Conclusions.

Factors related to GA and/or to KOEM%KM may be related to O₂S_x - IG1M-NS relations after control for TEMPM in addition to SEX, SGA, PNA, TEMPM, KM, and SpO₂M.

