

USEFULNESS OF SALIVA IN THERAPEUTIC DRUG MONITORING OF CAFFEINE IN PRETERM INFANTS

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BACKGROUND AND IMPORTANCE

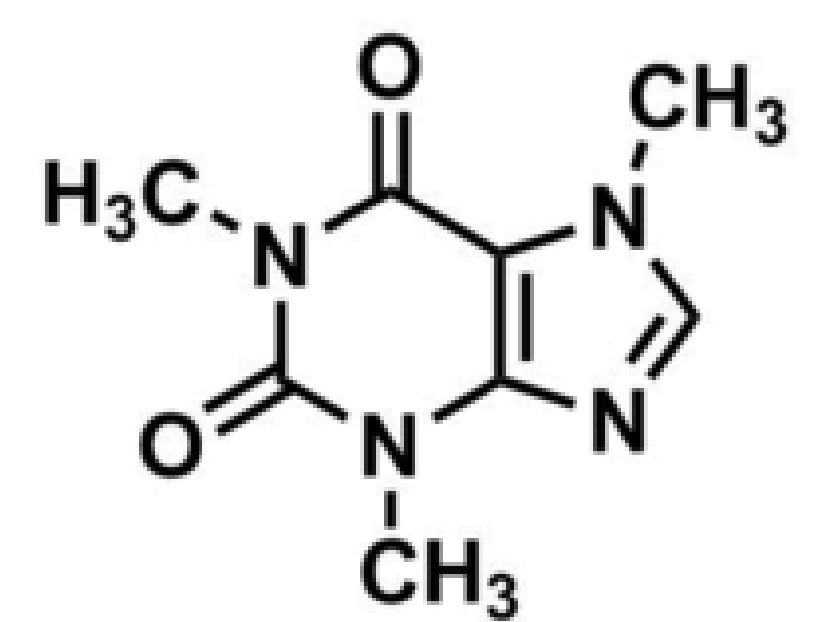
Apnea of prematurity is an alteration of the regulation of breathing. The treatment of choice is caffeine and pharmacokinetic monitoring may be necessary.

AIM AND OBJECTIVES

The goal is to establish the usefulness of saliva for monitoring serum caffeine levels non-invasively.

MATERIAL AND METHODS

- ✓ **Study type:** unicentric prospective observational
- ✓ **Sample collection:** two paired pre-dose of saliva-blood per patient
- ✓ **Sample processing:** centrifugate and storage at -20°C
- ✓ **Concentration determination:** micro-extraction in solid phase + capillary liquid chromatography



RESULTS

Saliva concentration
16.35 ± 10.75 µg/mL

Serum concentration
19.28 ± 9.31 µg/mL

- Neonates number: 47
- Gestational age: 27.8±2.36 weeks
- Birth weight: 1.11±0.44 Kg
- Sex: 62% male
- Administration: 59% oral

- Serum and saliva concentrations showed a strong correlation (Pearson's correlation=0,83 [figure A]), higher with oral administration (0,90 [figure B] versus 0,73 [figure C]).
- Predictive model of linear regression of blood values was performed from saliva values. No differences in correlation were observed through a multivariate analysis.

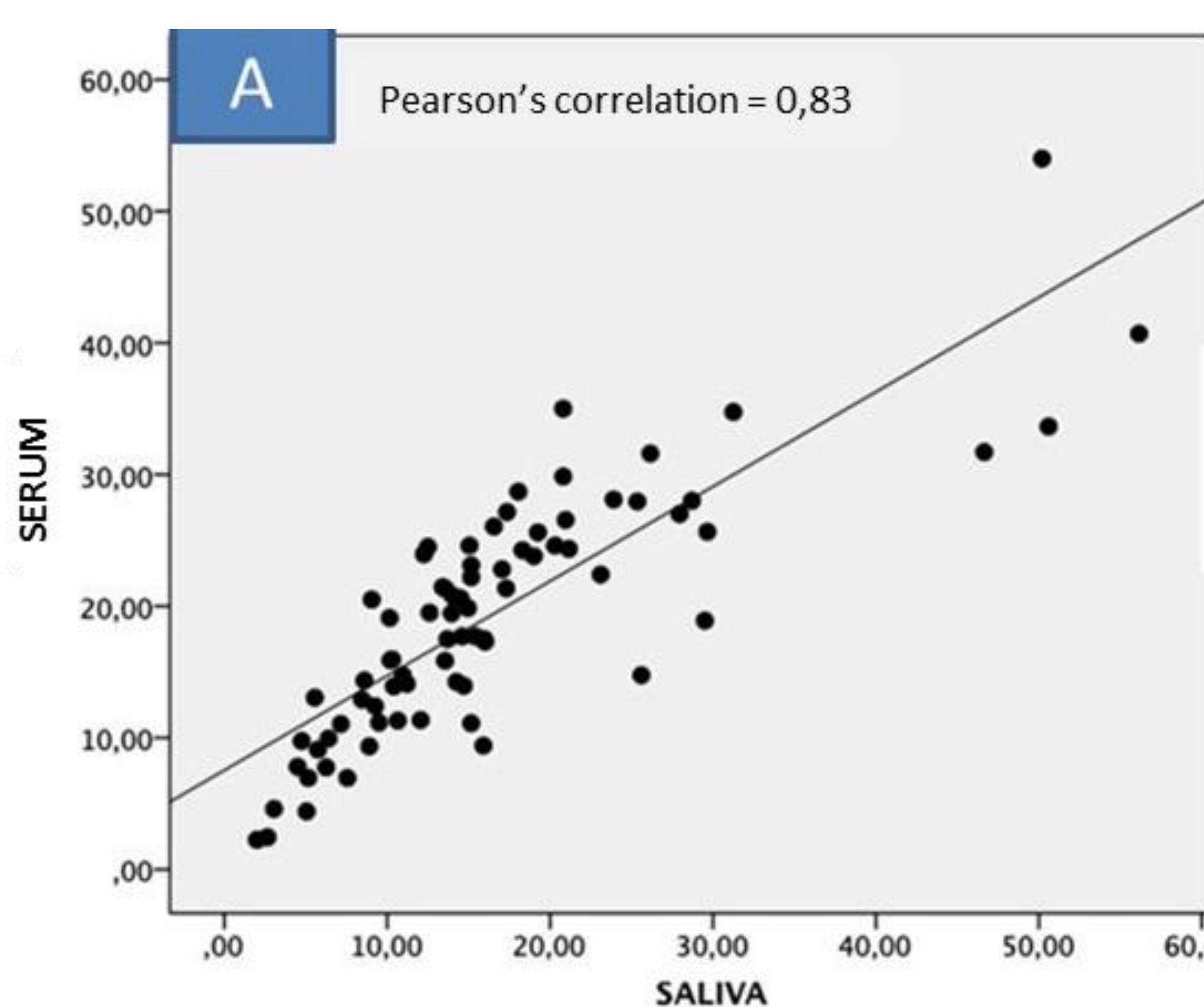


Figure A: Total correlation between serum and saliva (intravenous and oral).

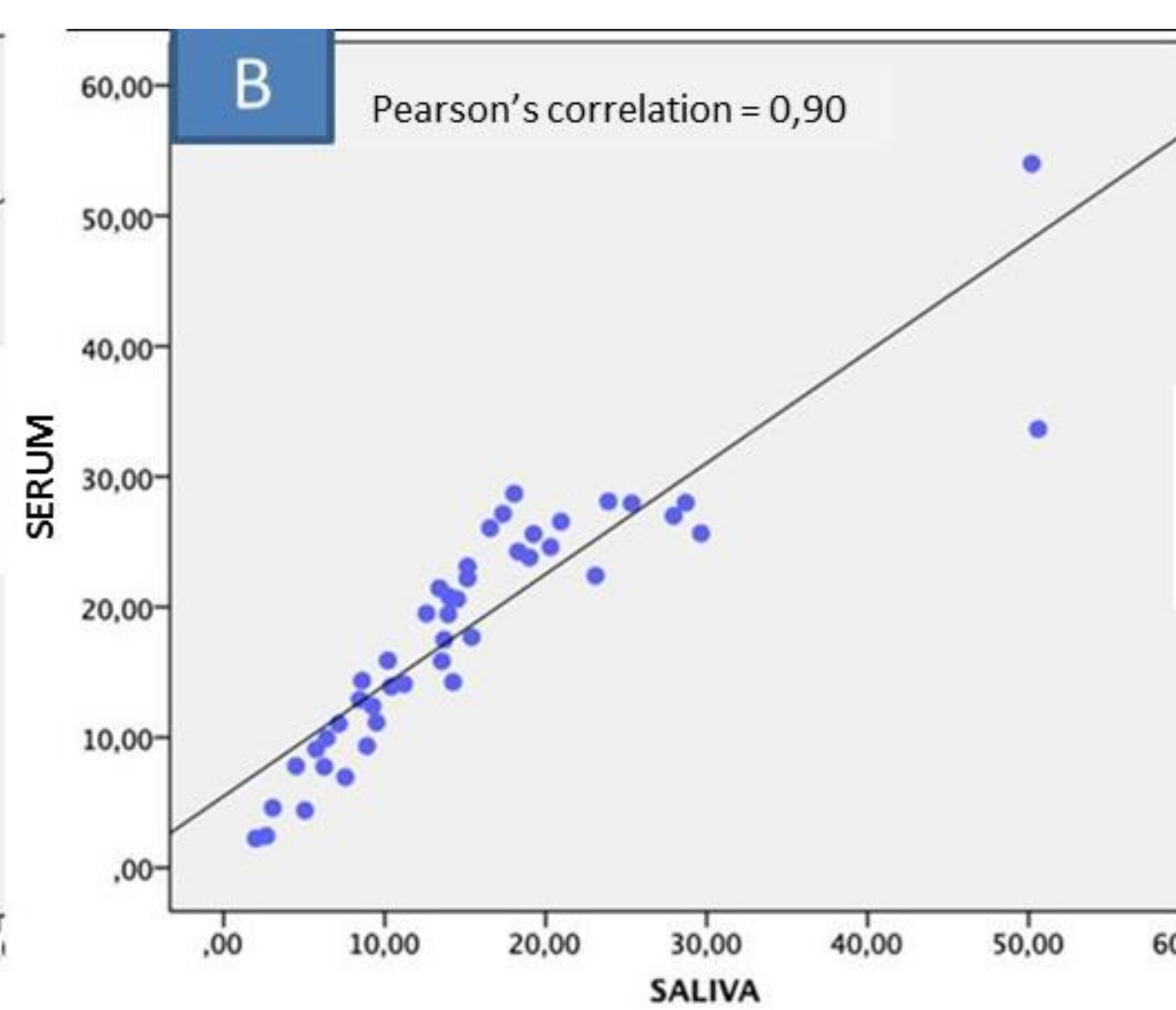


Figure B: Total correlation between serum and saliva (oral).

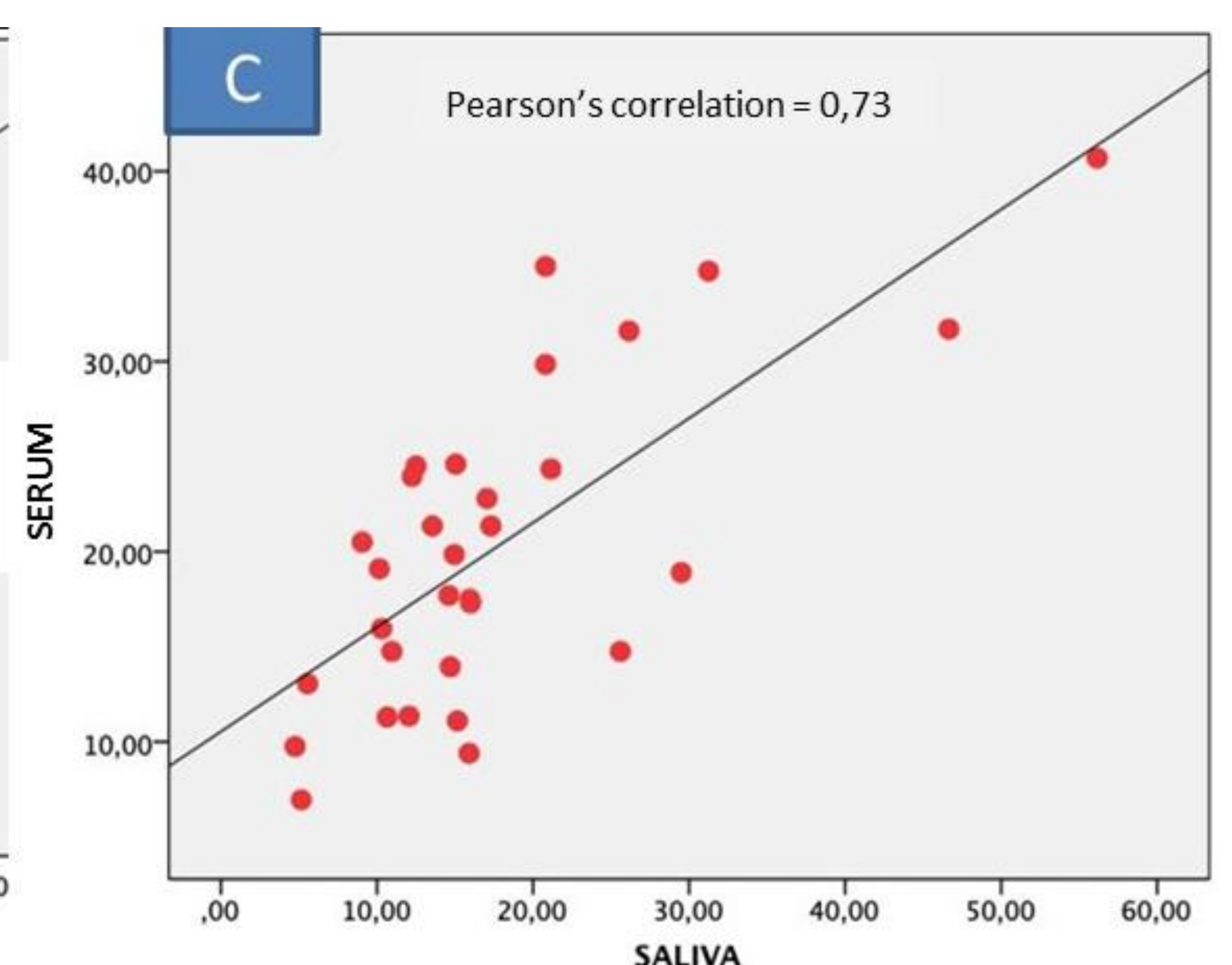


Figure C: Total correlation between serum and saliva (intravenous).

CONCLUSION AND RELEVANCE

Saliva determination is a reliable and non-invasive method for monitoring caffeine levels in preterm children with apnea. Correlation is higher when caffeine is administered orally, probably due to greater clinical stability when oral medication is administered.

