ECE2015
Dublin, Ireland

C REACTIVE PROTEIN IN PEDIATRIC AGED OBESE PATIENTS

TWO METHOD COMPARISON

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INTRODUCTION AND OBJECTIVE

Obesity as a pro-inflammatory state is associated to increased levels of C reactive Protein (CRP). CPR is considered as a cardiovascular (CV) risk independent marker and is being researched as a predictive atherosclerosis biomarker in obese children.
The American Heart Association (AHA) recommends a 3 class approach when aiming at CV risk stratification *(Low <1,0 mg/L; Moderate 1,0-3,0 mg/L; High >3,0 mg/L)*. These classes were extrapolated to the pediatric aged patients
Compare the performance of two different CPR assays, using blood samples from an obese pediatric population

METHODS

79 patients were enrolled (convenience sample) (ages 12-17).
Serum CPR levels were simultaneously assayed using two distinct analytical methods: Classic wide rage CPR assay (wrCPR Siemens Latex enhanced immunoturbidimetry; ADVIA® *2400; CMD=0,03mg/L Normalization: CRM 470 IFCC), and high sensitivity PCR (CardioPhase® hsCRP Siemens BNproSpec® Siemens CMD=0,175mg/L).*
SPSS® 20V software was used for statistical analysis.

RESULTS

The Correlation coefficient (R=0,9971)(p<0,001)(*Pearson's test*) showed a very strong positive correlation between the two assays. (y=1,26x-0,34).

The Bland-Altman dispersion plot, pointed that the inter assay (absolute (AD) and percentual (PD)) differences were in 95% confidence interval (except one *outlier* (>10mg/L) (AD) and the 6 lowest pairs (PD)).

PCR values of both assays were stratified according to AHA CV risk classes, (72 pairs (91,14%) were grouped in the same class, including the aforementioned 6 lowest pairs). The *Fleiss' test* (κ=0,858)(p<0,001) showed a very strong AHA class agreement of both assays.

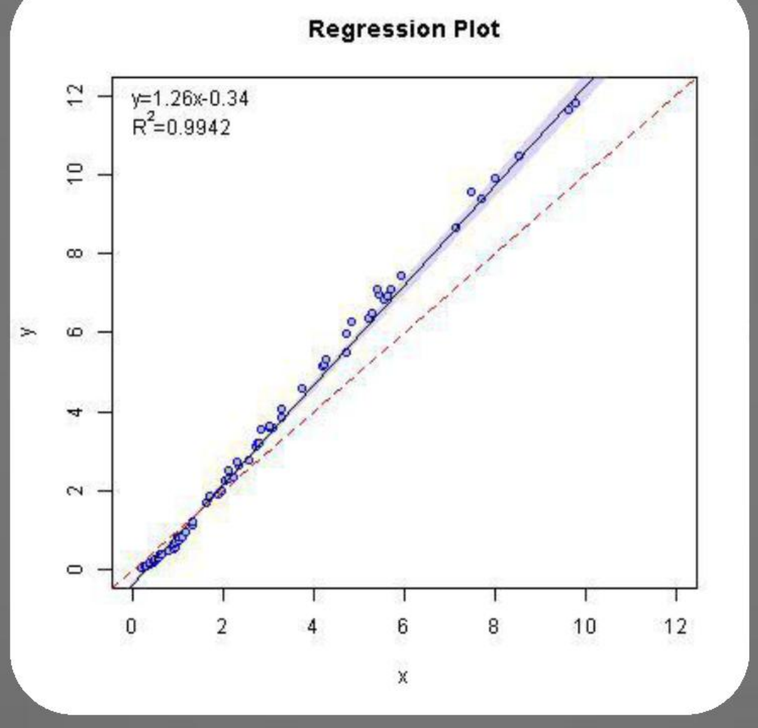

Fig 1. Linear Regression (Y=wrCRP; X= hsCRP)

hsCRP \ wrCRP	Class 1	Class 2	Class 3
Class 1	22	0	0
Class 2	3	13	4
Class 3	0	0	37

K = 0,858

Table 1. Class Agreement

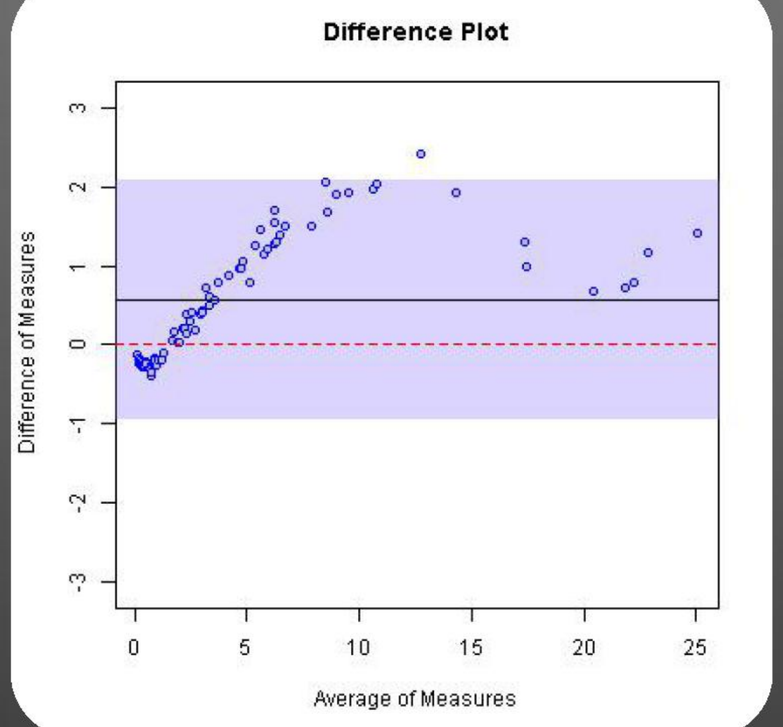

Fig 2. *Bland-Altman Plot*

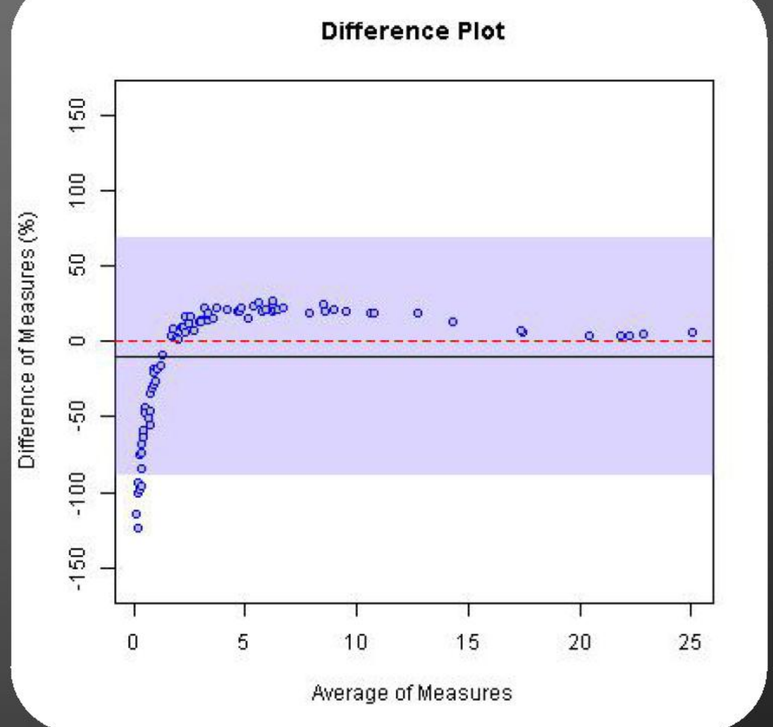

Fig 3. Difference Plot (%)

CONCLUSION

A strong correlation and agreement has been shown between the two assays.

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17 ECE
611--EP
Obesity and cardiovascular endocrinology
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DOI: 10.3252/pso.eu.17ece.2015
Poster presented at: ECE2015 16-20 May 2015 DUBLIN, IRELAND 17th EUROPEAN CONGRESS OF ENDOCRINOLOGY
PosterSessionOnline.com