

RENAL FUNCTION ESTIMATION BY DIFFERENT METHODS (CKD-EPI, COCKCROFT-GAULT AND MDRD4-IDMS) AND ITS EFFECT ON THE DOSE OF IV DEXKETOPROFEN

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Background

The different methods that currently exist to estimate renal function take into account different parameters, which may affect in the dose of some drugs, such as dexketoprofen.

Purpose

1. To determine the differences in the estimates of renal function, using CKD-EPI, Cockcroft-Gault (CG) and MDRD4-IDMS to estimate the glomerular filtration rate (eGFR).
2. To assess their effect on the functional characterization of patients and the dose of IV dexketoprofen.

Material and methods

- Retrospective observational study performed in adults admitted to surgical units – general, trauma and obstetric - treated with IV dexketoprofen in a tertiary hospital from January to September 2011 (9 months).
- The eGFR was calculated by CKD-EPI, MDRD4-IDMS and Cockcroft Gault. Patients with serum creatinine below 0.4 mg/dl were excluded.
- CKD-EPI was used as reference formula to assess the concordance between the different methods of estimating, classifying patients in 3 eGFR groups – according to the summary of product characteristics of IV dexketoprofen - <50mL/min/1.73m², 50-80 mL/min/1.73m² and >80 mL/min/1.73m².

Results

- N= 1946 patients (45.7%♀ y 54.3%♂) from a total population of 2052 admissions
- Mean age= 59.8 years (range 17-103)
- Mean serum Cr = 0.84 mg/dL±0.43
- Mean eGFR according to CKD-EPI= 83.05 mL/min/1.73 m²±26.17

- The recommended dose of IV dexketoprofen - according to the summary of product characteristics - is:
- if eGFR<50mL/min/1.73m²: contraindicated.
 - if eGFR 50-80mL/min/1.73m²: 25 mg every 12h.
 - if eGFR >80mL/min/1.73m²: 50 mg every 8h - No dose adjustment required

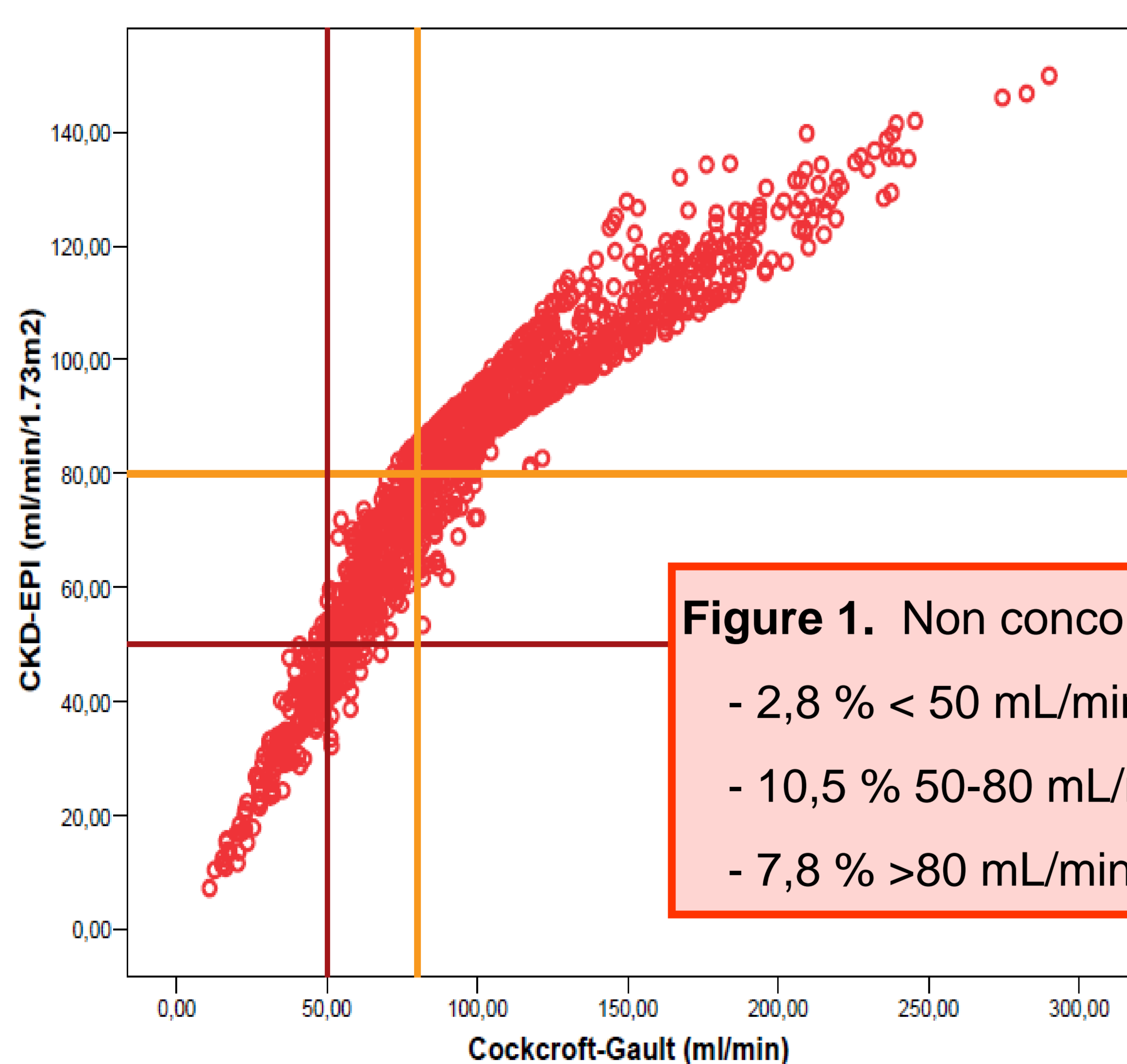


Figure 1. Non concordance in eGFR:
- 2,8 % < 50 mL/min/1,73m²
- 10,5 % 50-80 mL/min/1,73m²
- 7,8 % >80 mL/min/1,73m²

Figure 1. CKD-EPI vs Cockcroft-Gault

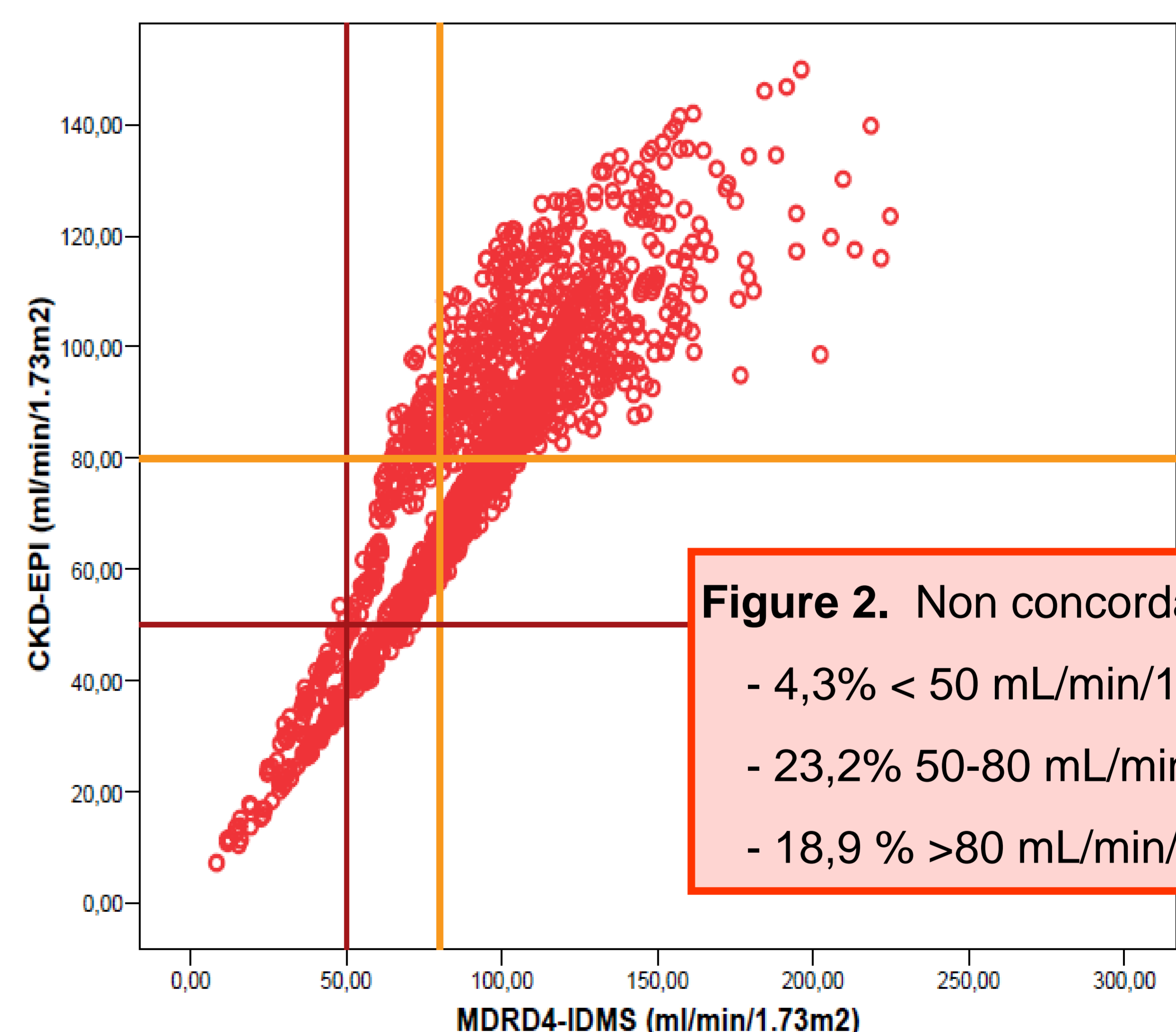


Figure 2. Non concordance in eGFR:
- 4,3% < 50 mL/min/1,73m²
- 23,2% 50-80 mL/min/1,73m²
- 18,9 % >80 mL/min/1,73m²

Figure 2. CKD-EPI vs MDRD4-DMS

Conclusions

- A great difference was found in the estimates of renal function between the three methods used – CKD-EPI, MDR4-IDMS and CG – in the three eGFR functional categories – <50,50-80 and >80mL/min/1.73m² - ranging between 2.8% and 23.2%.
- These results are relevant in clinical practices because the functional category determines the non-use or limited dose of IV dexketoprofen for each patient.