

CONCORDANCE BETWEEN GLOMERULAR FILTRATION RATE EQUATIONS IN PATIENTS WITH CHRONIC KIDNEY DISEASE TREATED WITH HEPARIN AND THEIR RELATIONSHIP WITH BLEEDING RISK.



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BACKGROUND AND IMPORTANCE

The estimation of glomerular filtration rate (GFR) is used to monitor renal function in patients with chronic kidney disease (CKD).

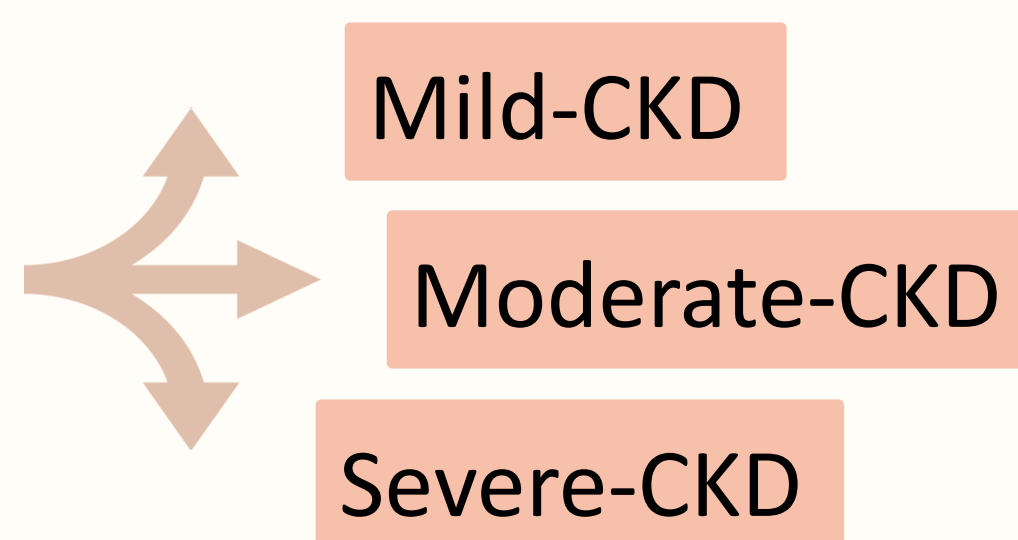
It is also used in clinical practice to adjust the dosage of certain drugs, like as low molecular weight heparins (LMWH), due to the high risk of bleeding, especially in patients with CKD.

AIM AND OBJECTIVES

- To compare the CKD-EPI, MDRD-4 and MDRD-IDMS equations for estimating GFR.
- To assess the relationship between GFR and bleeding risk in patients treated with LMWH.

MATERIALS AND METHODS

- Prospective observational study carried out in a second level hospital.
- 51 patients hospitalized with CKD → categorized into three groups based on creatinine levels
- Patients with acute, pre-renal or exacerbated renal disease were excluded.
- Programs used: Mambriño XXI®, Excel® and SPSS®.

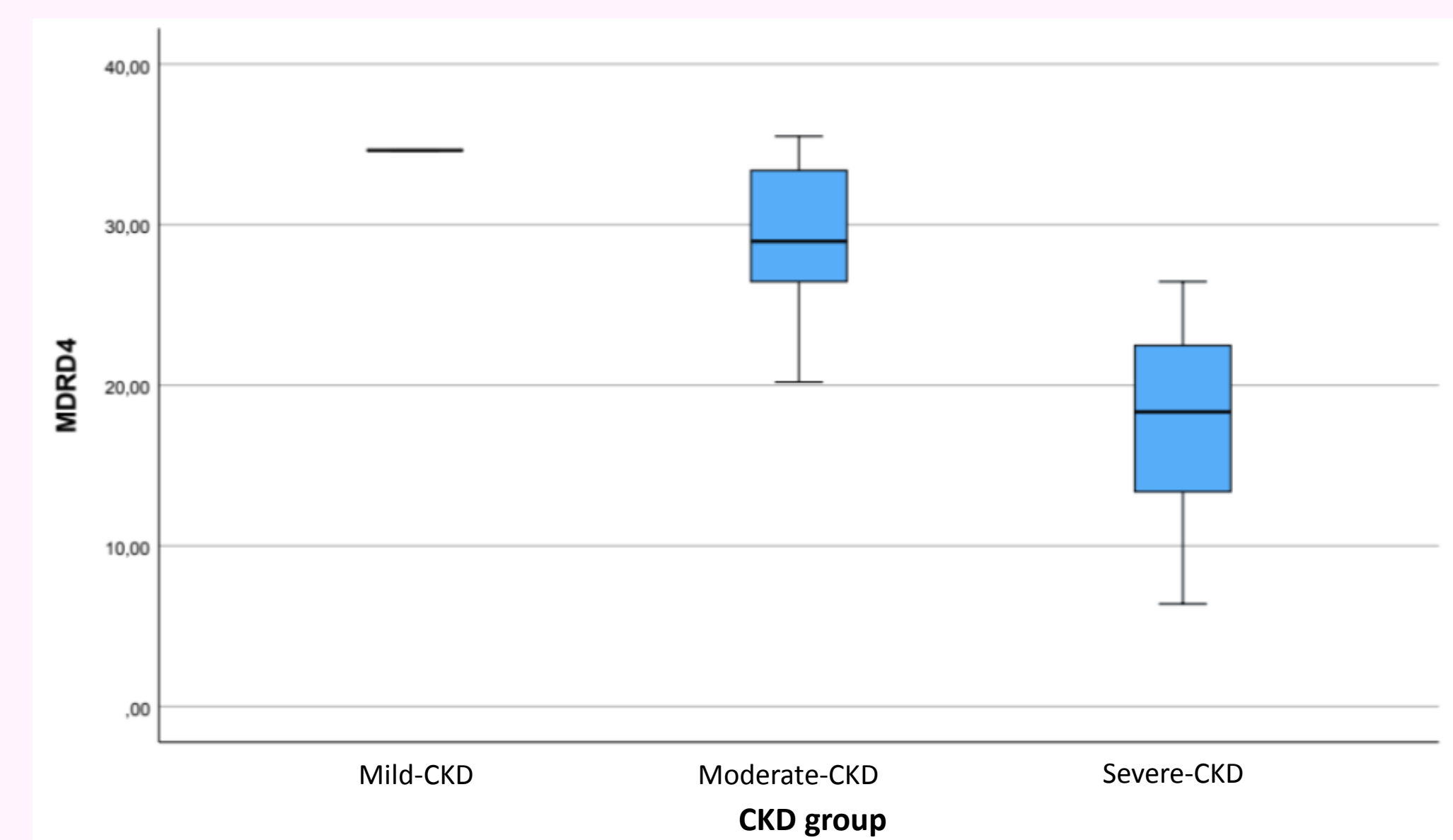
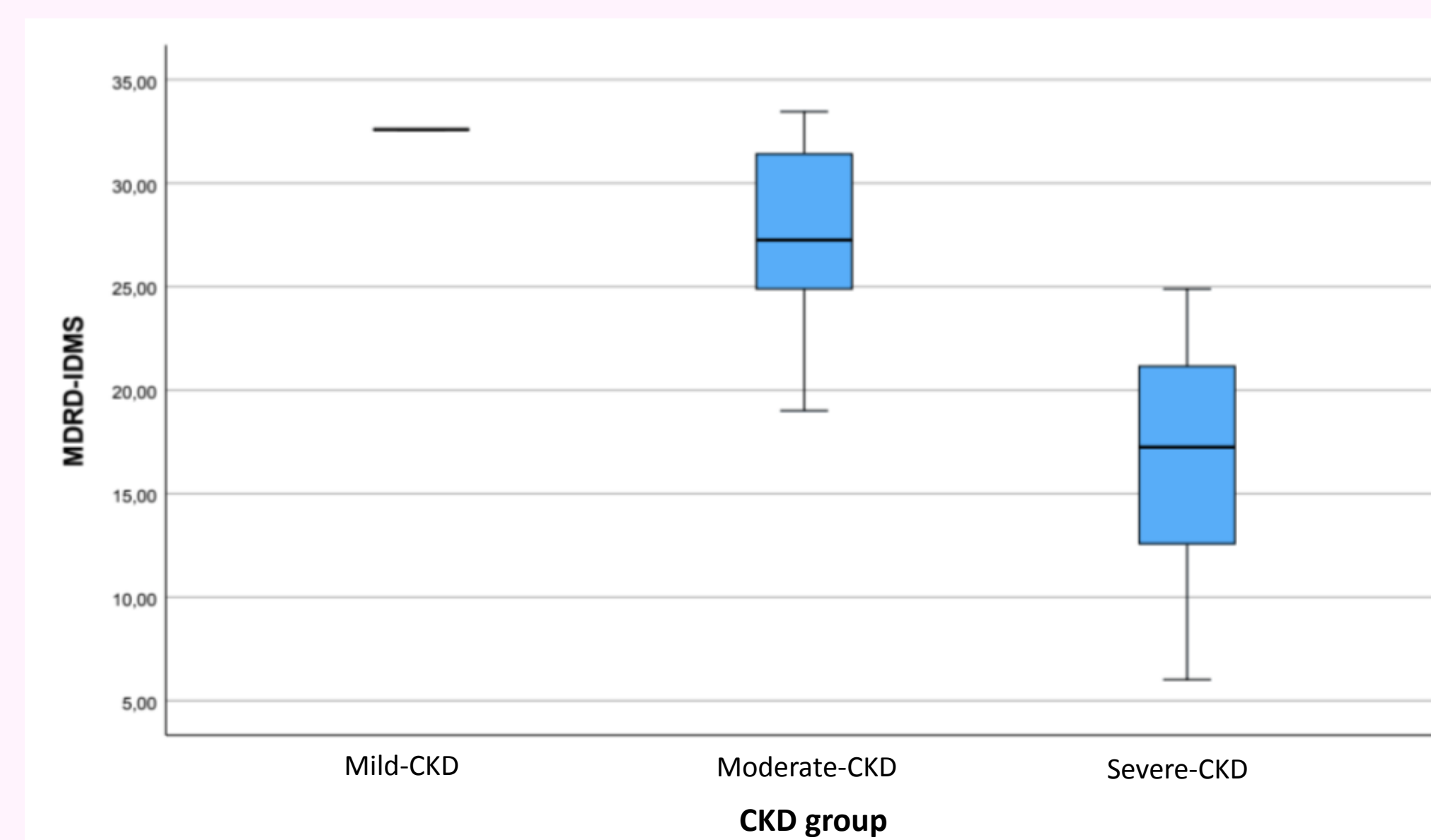
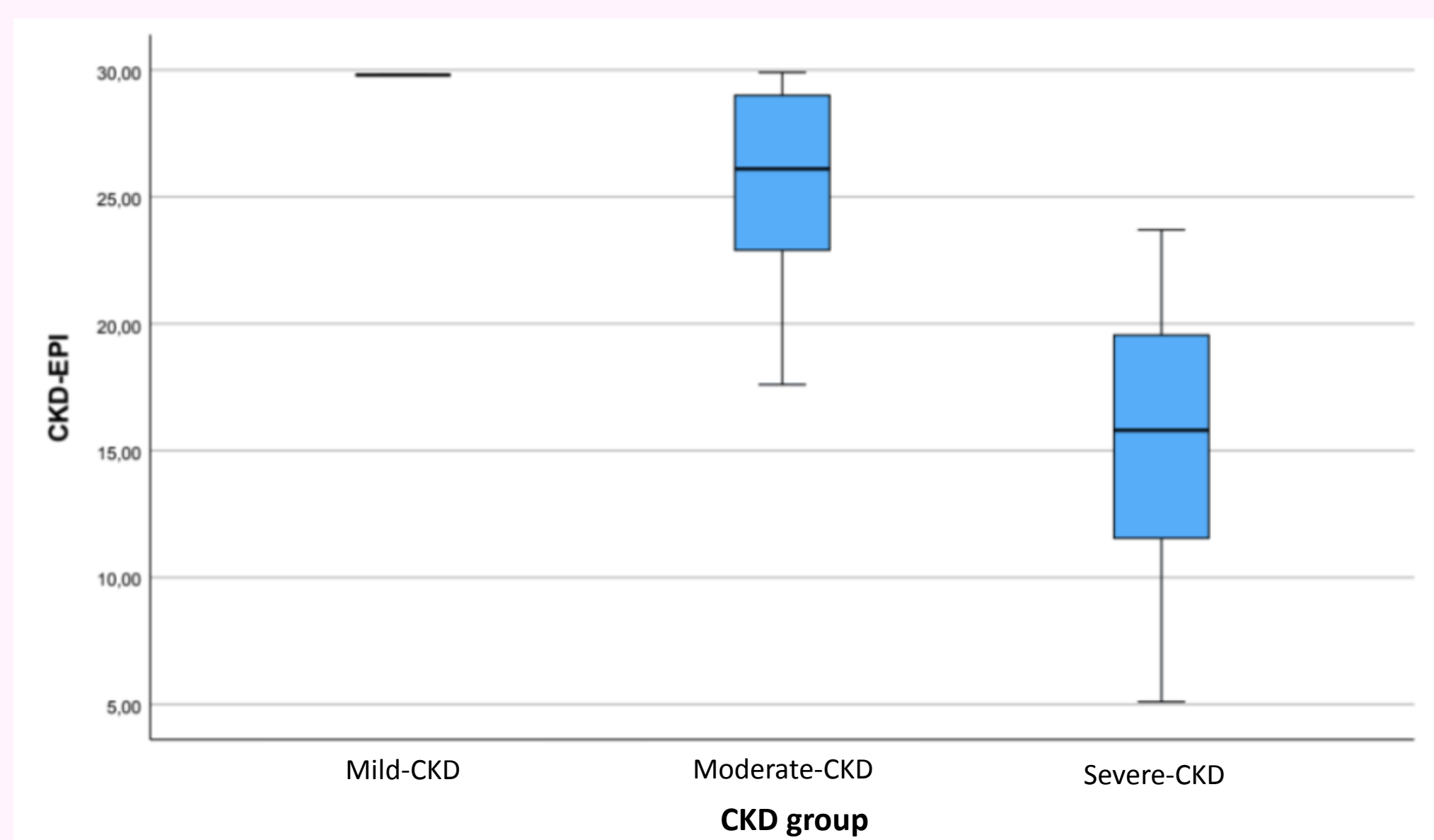


RESULTS

ESTIMATE MEAN GLOMERULAR FILTRATION RATE WITH DIFFERENT CALCULATORS

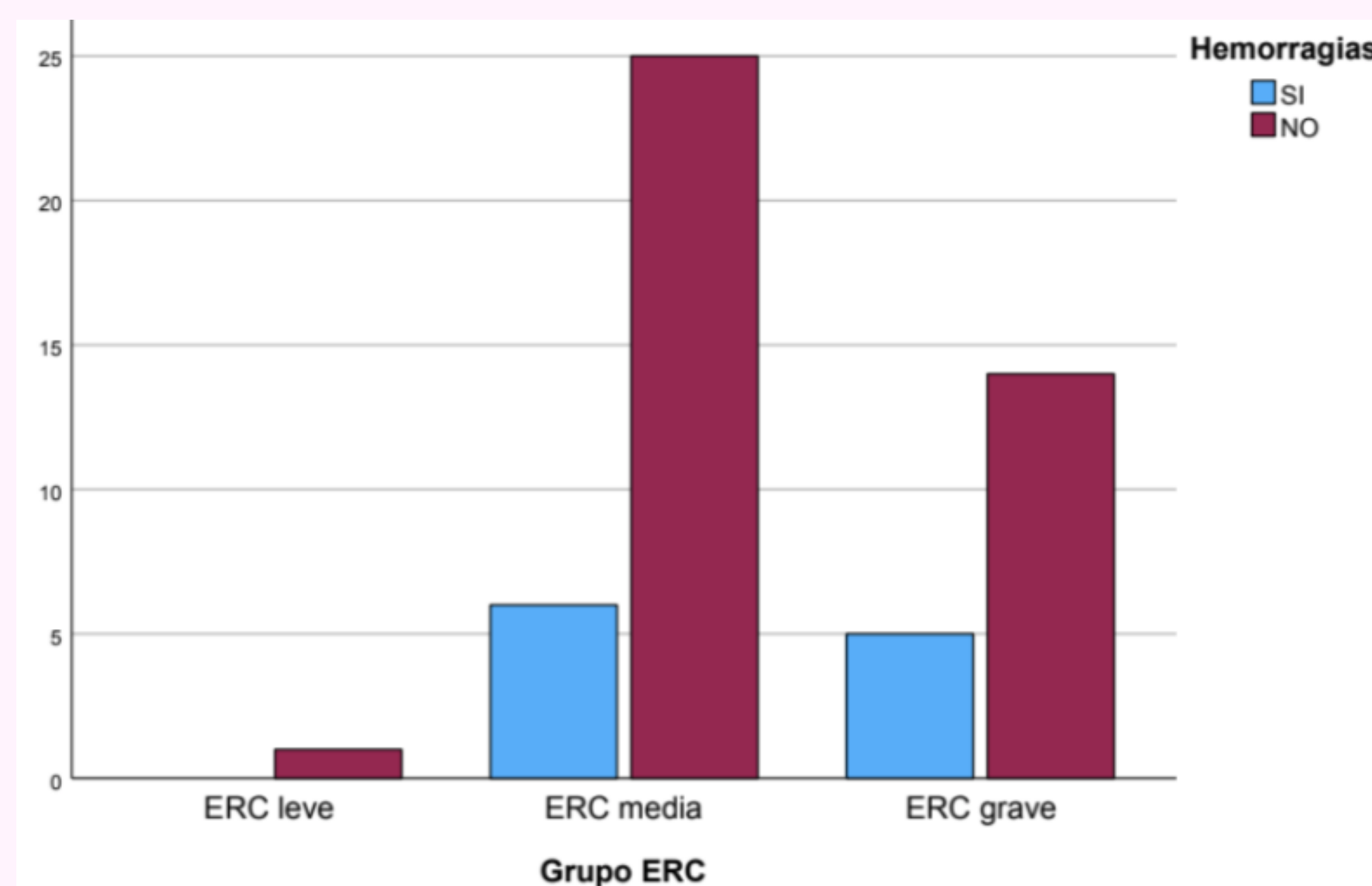
| | | |
|-----------|--------------|--------------|
| CKD-EPI | Mild-CKD | 29,8 mL/min |
| | Moderate-CKD | 25,30 mL/min |
| | Severe-CKD | 15,24 mL/min |
| MDRD-IDMS | Mild-CKD | 32,59 mL/min |
| | Moderate-CKD | 27,44 mL/min |
| | Severe-CKD | 16,55 mL/min |
| MDRD4 | Mild-CKD | 34,63 mL/min |
| | Moderate-CKD | 29,17 mL/min |
| | Severe-CKD | 17,56 mL/min |

| | | |
|--|--------------|-------------|
| Average difference between MDRD-IDMS - CKD-EPI | Mild-CKD | 2,79 mL/min |
| | Moderate-CKD | 2,14 mL/min |
| | Severe-CKD | 1,30 mL/min |
| Average difference between MDRD4 - CKD-EPI | Mild-CKD | 4,83 mL/min |
| | Moderate-CKD | 3,86 mL/min |
| | Severe-CKD | 2,31 mL/min |



BLEEDING RISK ACCORDING TO THE STAGE OF CKD

| CKD group | Hemorrhages? | |
|--------------|--------------|----|
| | YES | NO |
| Mild-CKD | 0 | 1 |
| Moderate-CKD | 6 | 25 |
| Severe-CKD | 5 | 14 |
| Total | 11 | 40 |



CONCLUSIONS AND RELEVANCE

- Overestimation of GFR can be seen when using MDRD-4 and MDRD-IDMS.
- Patients with mild CKD had greater variability in GFR between calculators compared to those with severe CKD.
- The safest calculator in CKD is CKD-EPI as it requires earlier dosage adjustment and avoids possible bleeding.

