

# Central venous catheter and quality of dialysis

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## Introduction

For some patients, a Central Venous Catheters (CVC) is the only possible vascular access (VA), including diabetic patients with severe vascular disease, patients who have exhausted all potential vascular access options due to multiple VA creations and patients with cardiomyopathy incapable of sustaining an adequate access flow. This has encouraged the nursing team to think about the quality of dialysis treatment for these patients, as this type of VA is associated with the highest rate of morbidity and mortality as compared to other VA types. Infections associated with vascular access are the major cause of hospitalisation with 25 to 30%, and the second cause of death.

## Objectives

To analyse treatment parameters (weekly treatment time, Qb, processed blood volume, Kt/V), laboratory values (ferritin haemoglobin, K<sup>+</sup>, and P), infection and hospitalisation rate by comparing them with KDOQI recommendations.

## Methods

The study included 6 patients with CVC as definitive VA. All parameters were analysed retrospectively over a period of 14 months.

On average, the 6 patients (3 females) were 73.17 years old, had a haemodialysis history of 124.83 months, a CVC history of 74 months, and an Age-Adjusted Charlson Comorbidity index of 8.3. The prevalent co-morbidities were arterial hypertension disease and diabetes.

In addition, in our unit we perform annual training on good nursing practices regarding application and maintenance of the CVC (e-learning), in accordance with good practice and all CVC measures are performed with standard disposables, such as CVC connection/disconnection sets.

## Results

When comparing **our unit results** with the latest **KDOQI guidelines** recommendations:

- Effective weekly treatment time: 788.37 (±80.46) *vs* 720 min/week
- Qb: 325.27 (±17.11) *vs* ≥ 300 mL/min
- Processed blood volume: 256.11 (±24.49) *vs* ≥220 L/week
- spKt/V 1.70 (±0.21) *vs* 1.2
- Ferritin: 569.49 (±129.85) *vs* ≥200 ≤800 µg/L
- Haemoglobin: 10.85 (±0.53) *vs* ≥10 <12 g/dL
- K: 5.22 (±58) *vs* >3.5 <5.5 mEq/L
- P: 3.82 (±0.84) *vs* ≥2.5 <5.5 mg/dL
- Infection Episodes: 0.065/1000 *vs* 1/1000 treatment days
- Hospitalisation: <15days/patient/year.

## Conclusion

Despite our patients' advanced age, they had a longer CVC history and Age-Adjusted Charlson Comorbidity Index score and their treatment parameters and laboratory values were above those recommended by the KDOQI guidelines. The number of infection episodes was lower than reported in other studies which might be related to our CVC connection/disconnection procedure.

## References

1. Am J Kidney Dis. (2015) – KDOQI clinical practice guideline for hemodialysis adequacy: 2015 update. 66(5):884-930. Acedido em [www.ajkd.org/article/S0272-6386\(15\)01019/pdf](http://www.ajkd.org/article/S0272-6386(15)01019/pdf), a 2/12/2015
2. American Journal of Kidney Diseases, Vol 35, nº 6, Suppl 2 (June), 2000:pp S1-S141. Acedido em [www.kidney.org/sites/default/files/docs/kdoqui2000nutritioningl.pdf](http://www.kidney.org/sites/default/files/docs/kdoqui2000nutritioningl.pdf), a 2/12/2015.

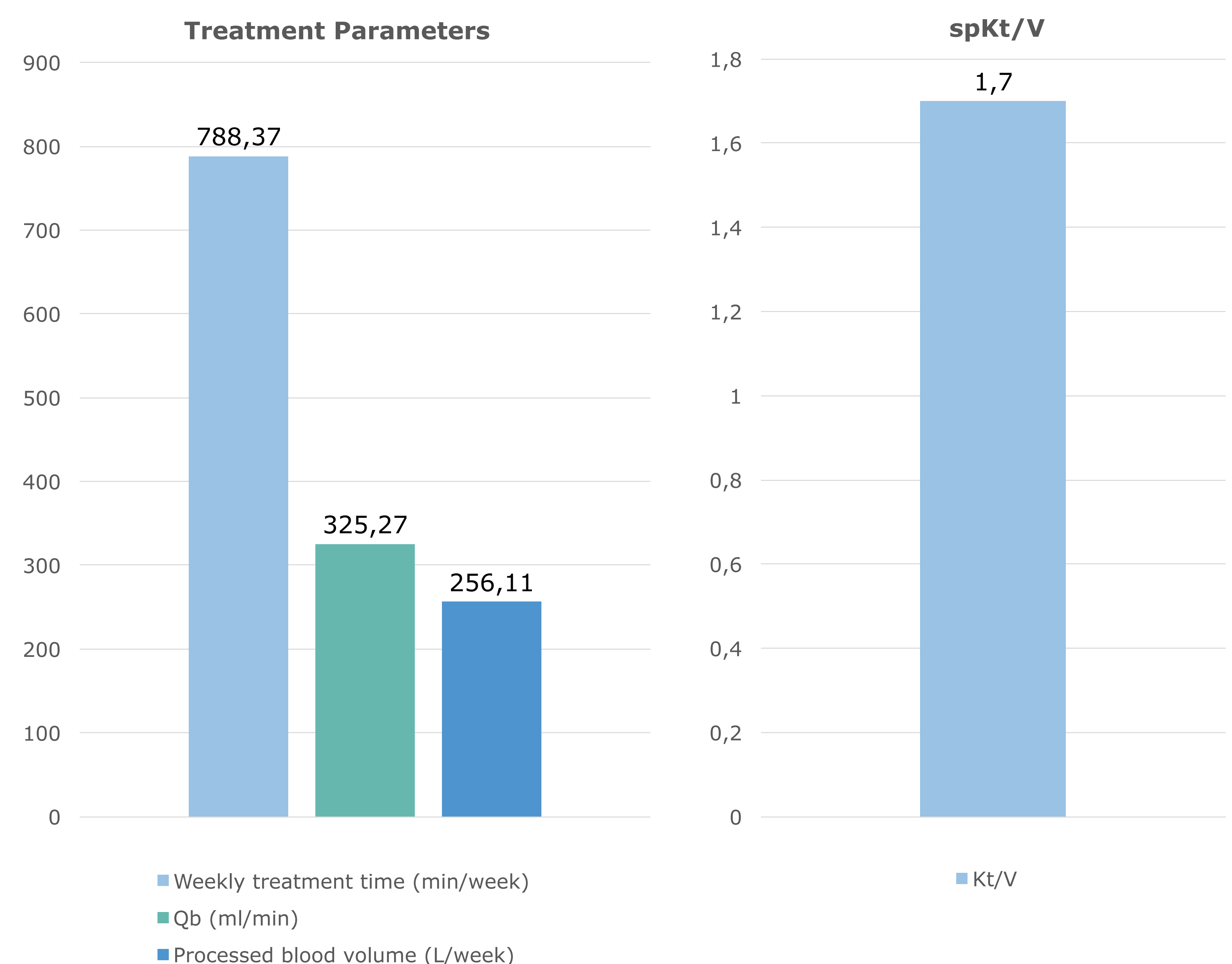


Figure 1: Results of treatment parameters

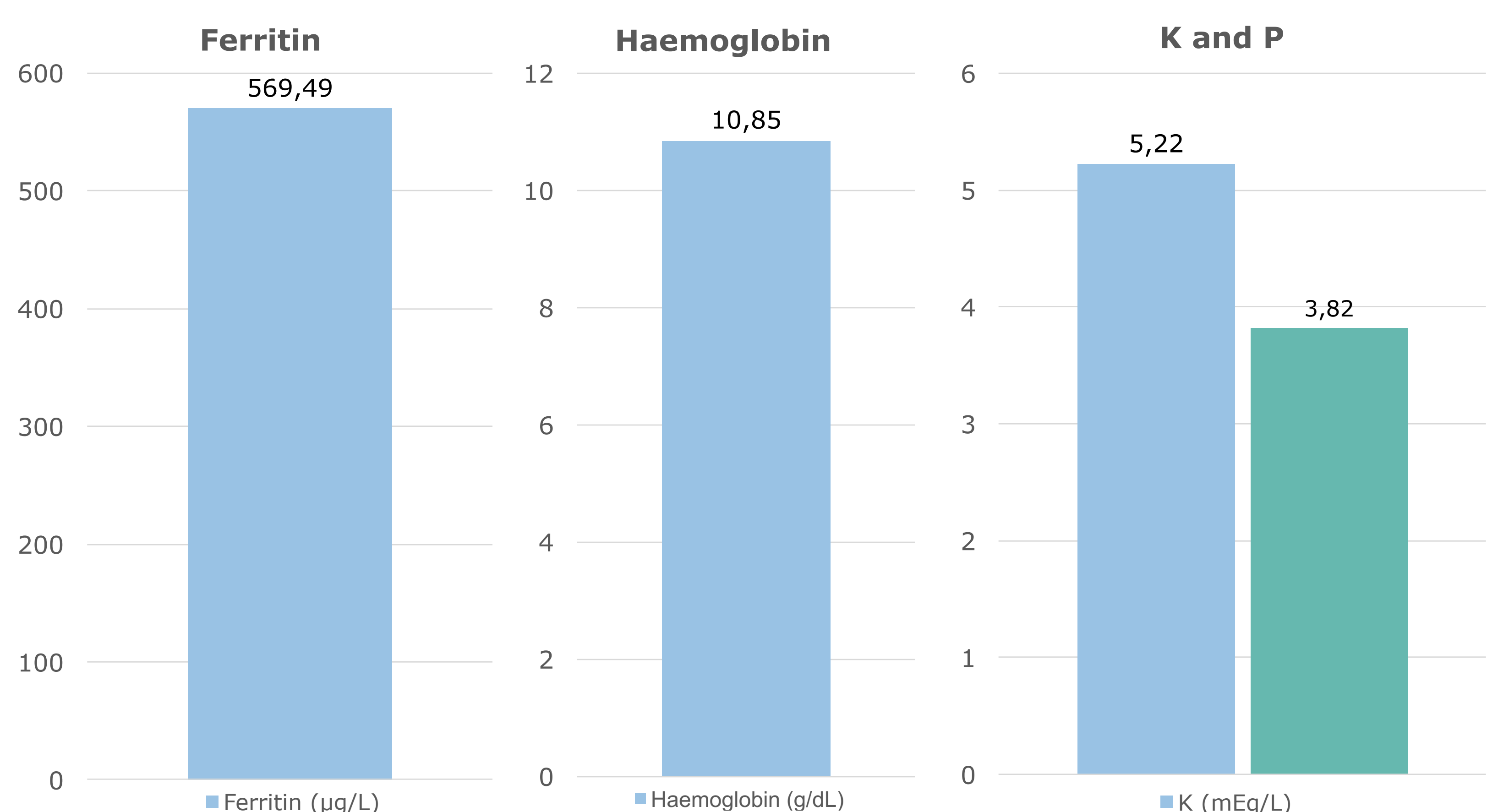


Figure 2: Results of laboratory values