

# SWITCHING TO LONG NOCTURNAL DIALYSIS: A CENTER'S EXPERIENCE

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## Background

Long Nocturnal Dialysis (LND) has been associated with better small molecule dialysis, improved quality of life, better blood pressure control, and reduced medication requirements.

## Objectives

To assess the differences in clinical and laboratorial values after the switch from on line Hemodiafiltration (HDF) to LND.

## Methods

A retrospective analysis, comparing mean values of clinical and laboratorial variables during the 6 months prior to transition ('HDF period') and the first 6 months of LND was performed.

We reviewed: dry weight, normohydration /overhydration (OH) status (evaluated by monthly bioimpedance spectroscopy), Kt/V, pre-dialysis urea, hypotensive drugs and systolic blood pressure, erythropoietin stimulating agents (ESA), iron and phosphate binders therapeutic doses. Hemoglobin levels, C-reactive protein, potassium, phosphorous, calcium and intact parathyroid hormone (PTH) were evaluated monthly.

The Kidney Disease Quality of Life Short Form (KDQL-SF) was applied to assess the patients' quality of life.

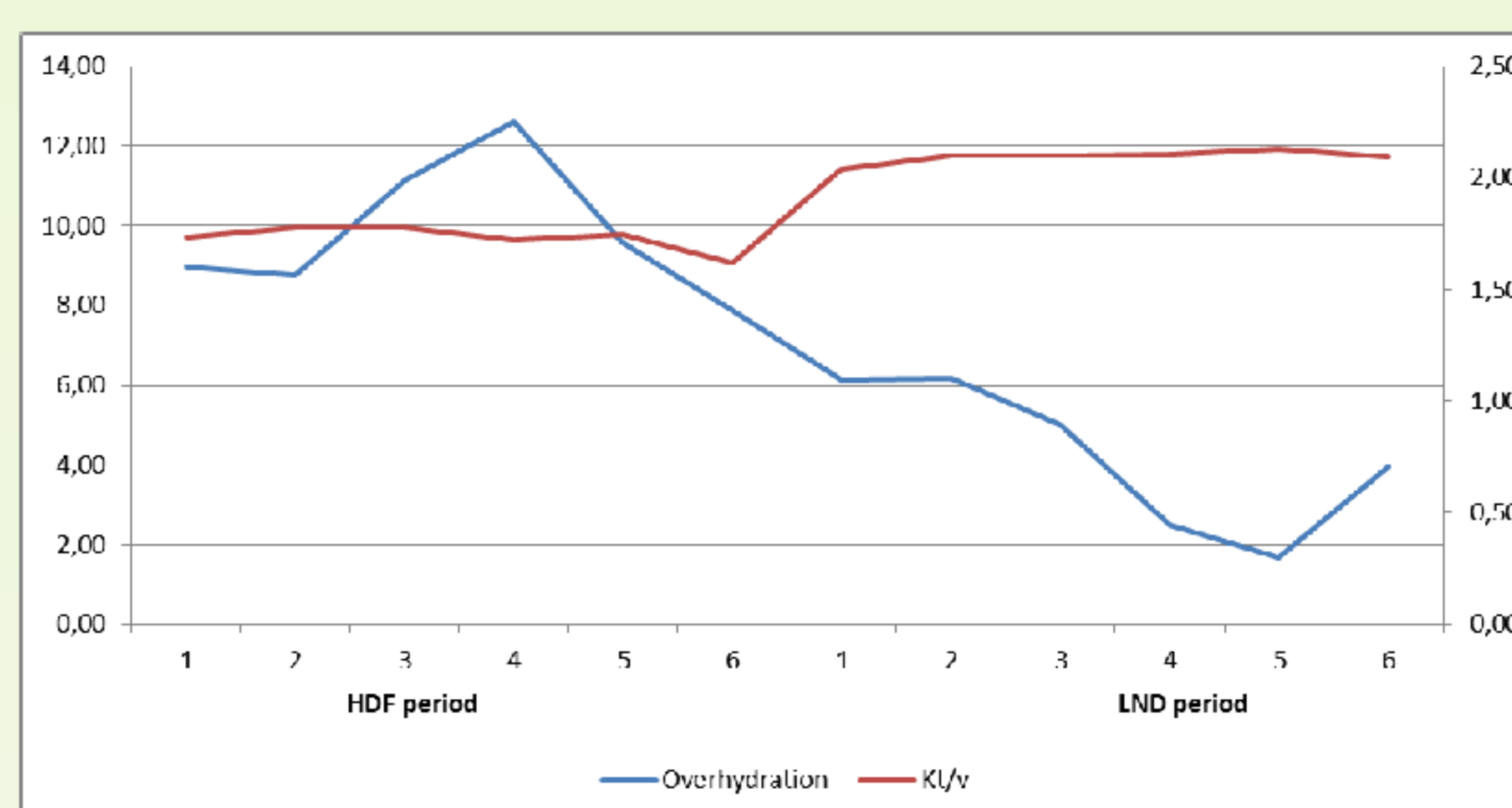
We analyzed 10 patients (6 male, age  $41.2 \pm 7.21$  years, 2 diabetic, 6 hypertensive, dialysis vintage de  $61.7 \pm 39.4$  months), and the effects of switching from on line HDF (240 minutes per session) to LND (395 minutes per session).

Statistical analysis was performed using t-test for paired samples - HDF period vs LND period. A p-value  $< 0.05$  was considered statistically significant.

## Results

### • Dialysis parameters

Following the switch to LND, a reduction in the OH ( $10.2\% \pm 8.63$  vs  $4.6\% \pm 7.2$ ;  $p=0.006$ ) and pre-dialysis urea ( $129.74 \pm 28.7$  vs  $114.53 \pm 23.94$  mg/dl;  $p<0.001$ ) was observed. There was an increase in the mean Kt/V value ( $1.75 \pm 0.37$  vs  $2.09 \pm 0.39$ ;  $p<0.001$ ).

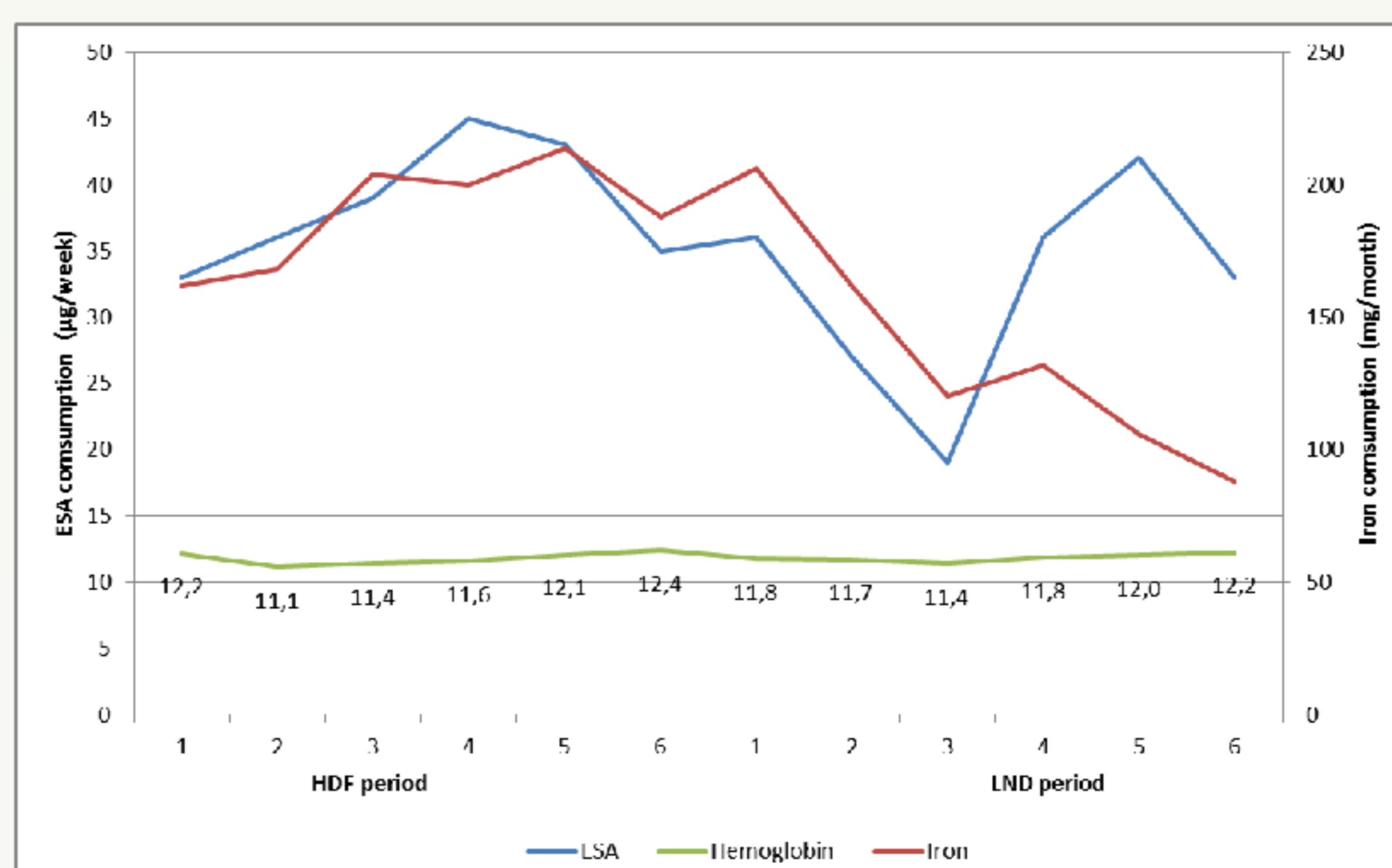


### • Hypertension

During the LND period, the use of hypotensive drugs was reduced or discontinued in 6 out of 10 patients, while the systolic blood pressure remained steady.

### • Anemia

The use of ESA declined ( $38.5 \pm 24.18$  vs  $30.83 \pm 22.54$   $\mu\text{g}/\text{week}$ ;  $p=0.034$ ) as did the use of iron ( $189.33 \pm 117$  vs  $116 \pm 67$  mg/month;  $p=0.057$ ), with comparable hemoglobin levels.



### • CKD-MBD

There was a reduction in the mean phosphorous level ( $5.05 \pm 0.9$  vs  $4.23 \pm 0.93$  mg/dl;  $p=0.010$ ), with a concomitant raise in the mean calcium level ( $8.59 \pm 0.32$  vs  $9.1 \pm 0.3$  mg/dl;  $p<0.010$ ). An upward trend was noted in PTH levels ( $328.1 \pm 161.5$  vs  $385.9 \pm 241.5$  pg/ml;  $p=0.172$ ), and use of phosphorous binders was reduced or discontinued in 6 patients. No statistically significant change was identified in vitamin D dose.

### • Quality of Life

Of the parameters analyzed in the KDQL-SF, there was a statistical significant improvement in the patients' perception of their health, sensation of breathlessness, anorexia, perception of fatigue and the degree of satisfaction with the amount of time spent with family and friends.

## Conclusion

After 6 months of switching from a high efficient dialysis (on line HDF) to LND, there was a substantial increase in dialysis efficiency, in hyperphosphatemia and anemia control (with a significant reduction in the use of ESA) and a much better correction of overhydration.

These excellent results were amplified by the patients' perception of improvement in their quality of life.

## References

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