

SUPPLEMENTARY DATA

Metabolic evaluation

Patients who kept cinacalcet had higher levels of PTH (237.7 vs. 125.9 pg/mL, $p=0.015$), and klotho (1551.2 pg/mL vs. 779.7 pg/mL, $p=0.031$), and lower levels of phosphate (2.6 mg/dL vs. 3.1 mg/dL, $p=0.041$) and magnesium (1.6 mg/dL vs. 1.7 mg/dL, $p=0.047$), with no differences in BALP, sclerostin, vitamin D or calcium.

The median percentage reduction in PTH was 70.5%, but seven patients had a median percentage PTH increase of 11.2%. Those seven patients had lower PTH levels before transplantation (66.3 pg/mL vs. 488.5 pg/mL, $p<0.001$), and higher dialysis vintage (83 months vs. 54 months, $p=0.037$), and 3 (out of 7) patients underwent parathyroidectomy. Medication, such as cinacalcet use, had no role in the evolution of PTH levels. These differences had no impact on bone histomorphometry.

In 22 (31.9%) of our patients, BALP levels did not decrease, and the median percentage increase was 31.4%. Those patients had lower BALP levels at baseline (26.2 U/L vs. 35.9 U/L, $p<0.001$), higher calcium levels at baseline and after transplantation (9.6 mg/dL vs. 9.1 mg/dL at baseline; 10.2 mg/dL vs. 9.6 mg/dL after 1-year, $p=0.020$), higher FGF23 serum levels (6884.3 RU/mL vs. 1497.5 RU/mL, $p<0.001$), as well as lower klotho levels (492.9 pg/mL vs. 703.5 pg/mL, $p=0.036$), both at baseline. There was no significant relation between the absence of decreasing BALP and the use of calcitriol / vitamin D analogs / calcium-based phosphate binders.

At baseline and 1-year after the transplant, BALP levels were significantly different in the presence of high bone turnover, as we observed that the median BALP levels in the non-high turnover group were lower comparing with the median BALP levels in the high turnover group (at baseline - 31.2 [24.8 – 43.3] U/L versus 37.4 [32.7 – 61.2] U/L, $p=0.011$; 1-year after the transplant - 22.2 (16.1 – 33.4) U/L versus 54.0 (32.1 – 84.3) U/L, $p=0.002$).

The maintenance of high levels of BALP was associated with less cases of low bone-turnover after transplantation (27.3% vs. 55.3%, $p=0.027$). This is in line with the fact that BALP is an osteoblast marker, and so patients that maintained / increased their BALP levels had a higher bone cellular activity: higher Obs/BS (2.8% vs. 1.7%, $p=0.044$) and Ocs/BS (0.7% vs. 0.3%, $p=0.037$), BFR/BS (27.9 $\mu\text{m}^3/\mu\text{m}^2/\text{day}$ vs. 14.7 $\mu\text{m}^3/\mu\text{m}^2/\text{day}$, $p=0.034$) and BFR/ tissue volume (12.6 vs. 3.9, $p=0.033$). Also, it did associate with osteoid volume / bone volume

(OtV/BV) (4.6% vs. 3.9%, $p=0.034$], osteoid thickness (12.5 μm vs. 8.7 μm , $p=0.004$), and mineralization surface / bone surface (MS/BS) (8.2 vs. 2.4, $p=0.011$).

In 24 (34.8%) patients' klotho levels had a percentage reduction of 188.5% (in contrast with the expected percentage increase of 47.2%). These patients had higher levels of klotho at baseline (844.0 pg/mL vs. 494.7 pg/mL, $p<0.001$) and lower levels of calcium at baseline (8.8 mg/dL vs. 9.4 mg/dL, $p=0.002$), without other characteristic features.