SCLEROSTIN A POTENTIAL MARKER OF RECOVERY FROM SECONDARY HYPERPARATHYROIDISM AFTER KIDNEY TRANSPLANTATION

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Introduction:

Sclerostin secreted by osteocytes inhibits Wnt/β-catenin signaling pathway, thereby decreasing bone formation and osteoblastogenesis. Sclerostin is much less accumulated in end-stage kidney disease than FGF-23 and its secretion may not be directly regulated by phosphate. Thereby sclerostin may better reflect bone metabolism and recovery from secondary hyperparathyroidism (SHPT) in kidney transplant recipients (KTx).

The aim of the study was to analyze the effects of the changes of serum PTH and sclerostin and FGF-23 on osteoblast function reflected by serum bone alkaline phosphatase (BAP) for 9 months after successful kidney transplantation.

Methods and patients:

35 KTx patients were included into 9-month observational study (17M, 18F, age 49±11 years, BMI 25±4, time on dialysis 27±13 months).
Blood for measurement of serum creatinine, Ca, P, 25OH vitamin D, PTH, FGF-23, sclerostin and BAP was taken at immediately before KTx, and 1 and 2 weeks, and 1, 2, 3, 4, 5, 6 and 9 months thereafter.

Results:

	day 0	week 1	week 2	month 1	month 2	month 3	month 4	month 5	month 6	month 9
Creatinine mg/dL	-	5.9±3,8	3.8±3.4	2.6±2.0	1.9±1.1	1.9±0.9	1.8±0.7	1.7±0.5	1.8±0.7	1.7±0.9
Ca mmoL/L	2.1±0.23	2.1±0.3	2.1±0.22	2.36±0.17	2.4±0.24	2.42±0.19	2.46±0.17	2.52±0.14	2.48±0.17	2.52±0.22
P mmoL/L	1.57±0.6	1.57±0.77	1.19±0.56	1.06±0.57	0.96±0.3	0.96±0.36	0.99±0.24	1.01±0.22	1.03±0.27	0.99±0.24
25OHD nmol/L	10.1±5.5	10.6±7.4	9.1±6.0	9.4±10.4	8.1±7.5	9.5±8.9	6.4±5.3	9.9±8.6	6.4±5.9	10.1±9.5
PTH ng/mL	476±386	477±426	376±320	327±214	257±205	175±101	185±127	226±177	201±192	199±190
FGF-23 RU/ml	694±442	439±412	246±291	160±206	73±83	87±138	61±64	46±45	69±77	123±214
Sclerostin ng/mL	1.95±1.13	1.51±1.15	1.2±1.07	0.84±0.7	0.99±0.79	1.05±0.87	1.24±0.89	0.85±0.51	0.92±0.74	1.35±1.11
BAP U/L	74.6±62.3	51.2±51.2	60.9±74.8	57.6±54.6	55.1±49.2	44.9±27.0	46.1±38.9	50.5±33.3	55.9±40.5	53.3±35.9

At time of KTx FGF-23 correlated only with phosphate (r=0.62, p=0.01). Serum PTH correlated with BAP (r=0.49, p=0.04), but not with sclerostin.
At the end of 9-month observation neither sclerostin nor FGF-23 correlated neither with each other nor with other parameters of mineral and bone metabolism.

Conclusion

Both sclerostin and FGF-23 have limited utility as the markers of the resolution of SHPT and bone metabolism after KTx.

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