PARATHYROIDECTOMY: LONGTERM HARD AND SURROGATE OUTCOMES IN MATCHED GROUPS

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INTRODUCTION AND AIMS:

Previously we compared survival after parathyroidectomy (PTX) and on conservative treatment (CT) in matched groups of dialysis patients and demonstrated decreased mortality risk by 63% (95%CI 0÷87%; p=0.05). 3- and 5-year survival since the study start were 95±3 v. 80±5% and 93±4% v.56±8% (<0.01). Below we analyze long-term surrogate outcomes of the PTX and its influence on PTX effect on survival.

METHODS

The study groups were formed in prospective observation, comparing the survival of:

- 84 pts underwent PTX and
- 105 pts on conservative treatment matched by age, dialysis duration, and phosphate levels

selected from 285 pts who achieved:

- PTH level of 800 pg/ml in repeated tests with calcemia >2.5 mmol/l or
- PTH level of 1000 pg/ml regardless of calcemia.

- that could be the indication for PTX,

but that patients continued to receive available CT due to own choice or limited rate of PTX among waiting list). We compared the long-term (up to 5 years) dynamics of surrogate markers of CKD-MBD (PTH, phosphate, calcium, alkaline phosphatase) and evaluated its possible influence on survival.

RESULTS

	PTX	Conservative	*p*
Age, years	48±14	52±14	p=0.09
Male,%	52%	41%	p=0.12
Dialysis vintage, month	112±66	91±69	p=0.03
Baseline PTH before study start [interquartile range] pg/ml	1158 [815÷1688]	1134 [926÷1363]	p=0.8
Mean PTH during previous year before study start [interquartile range] pg/ml	1066 [IR 782÷1532]	1023 [818÷1254]	p=0.3

After initial postoperative drop by 1075 (95%CI 932÷1218) pg/ml (<0.001) PTH demonstrated deceasing trend. The serum calcium levels in PTX group were higher at baseline by 0.09 (95%CI 0.01÷0.19): 2.47±0.24 v.2.38±0.32 mmol/l as well as during the previous year follow-up: 2.48±0.20 v. 2.40 mmol/l (p=0.01). Ca decreased in a month after PTX by 0.35 (95%CI 0.24÷0.47) In survivors of PTX group the drop of serum calcium was deeper just after PTX as well as during whole follow-up. Phosphate decreased in a month after PTX by 0.61 (95%CI 0.42÷0.79) mmol/l. Similar initial drop of phosphate in survivors and in deceased groups was stable in survivors for 48 mo but was relatively short in deceased.

	in 5-year survivors	in deceased in 35±16 mo after PTX	*p*
Descending trends in PTH, pg/ml/quarter	12	16	p>0.1
Median PTH [interquartile range] pg/ml	90 [31÷258]	87 [41÷169]	p>0.1
The percent of patients with PTH <50 pg/ml	33%	40%	p<0.05
in range of 50-100 pg/ml	21%	15%	p<0.05
The drop of serum calcium just after PTX, mmol/l	to 2.09 [1.78÷2.40]	2.27 [2.21÷2.40]	p=0.3
The drop of serum calcium during whole follow-up, mmol/l	to 2.20 [2.00÷2.39]	to 2.39 [2.27÷2.52]	<0.01
Baseline phosphate levels, mmol/l	2.51±0.60	2.33±0.64	p=0.08
Phosphate levels during previous year follow-up	2.47±0.49	2.37±0.57	p=0.23
initial drop of phosphate to 1.74 [1.34÷2.36]	stable in survivors for 48 mo	short (9 mo)	<0.01

CONCLUSION

Patients survival after PTX can be influenced not only by changes in PTH but also by concurrent changes in other CKD-MBD markers; possibly hypocalcemia after PTX may be linked with less risks than without PTX. Shorter period of phosphate level decrease associated with worse survival.

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