

Assessing the Cost of Parathyroidectomy as a Treatment for Uncontrolled Secondary Hyperparathyroidism in Stage 5 Chronic Kidney Disease

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Introduction and Aims

Conventional therapy for chronic kidney disease mineral bone disorder includes control of serum phosphate with phosphate binders and the supplementation of activated vitamin D. In many cases this proves inadequate, and in the UK parathyroidectomy (PTX) is recommended for patients who are otherwise surgical fit as it is perceived as less costly than calcimimetics. However, no details of the true cost of PTX have been published.

AIMS: To describe the healthcare resource use and costs associated with patients receiving PTX as a treatment for uncontrolled secondary hyperparathyroidism in a single UK National Health Service (NHS) centre (Sheffield Kidney Institute).

Methods

One hundred patients with stage 5 chronic kidney disease who underwent PTX at the Sheffield Kidney Institute between January 2002 and December 2007 were identified. Four key elements of resource usage and overall costs up to 12 months post surgery were evaluated:

- Pre-operative assessment (investigations and clinician time),
- Surgical costs (theatre, pathology and length of stay),
- Peri-operative costs (medications, investigations, clinicians' time and outpatient appointments), and
- Complications including readmission up to 12 months post-operatively.

Sources of information included patient notes and exports from clinical information systems. The cost of medical time required for medication alteration as a result of biochemical results was also assessed using a combination of blood results and a record of dose changes. Unit cost multipliers were applied and results summed to obtain total direct costs

Demographic features

age: mean (SD)	49(14) years
Prevalence of diabetes :	11%
Prevalence of resp disease : (copd or asthma)	3%
Prevalence of TE disease: (previous DVT or PE)	4%
Prevalence of hypertension :	47%

Health care utilisation

PHASE	RESOURCE Mean (SD)
Operative stay:	6.83 (4.29) days.
Post-operative :	Antibiotic treatment 27%
	IV calcium infusions 42%
	Radiological imaging 37%
Readmission:	17% patients
	11 episodes of hypocalcaemia
	9 episodes of hypercalcaemia
	1 wound infection

Total Costs

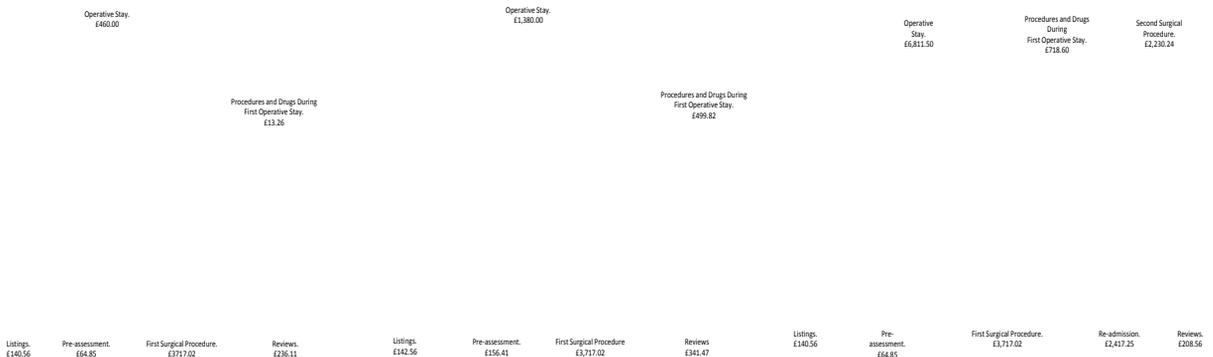
The average direct health care costs for the different types of stay and complications are as follows:

Description	Pre-operative	Operative	Readmission	Reviews	Total
Mean	£299	£5,772	£237	£520	£6,828
Median	£299	£5,597	£0	£341	£6,256
Standard Dev	£184	£1,640	£763	£410	£2,059
Standard error	£18	£164	£76	£41	£206

Least Expensive Patient (Total Cost: £4,632.00)

Median Patient (Total Cost: £6,237.28)

Most Expensive Patient (Total Cost: £16,308.58)



Conclusion

The NHS tariff cost for PTX for patients with uncontrolled secondary hyperparathyroidism in stage 5 chronic kidney disease is £2,786. This pilot study demonstrates that the true cost is considerably more at £6,828. This is a small descriptive retrospective study and therefore subject to various unknown potential confounders. This study could be used to identify the feasibility elements for an extended protocol in a larger multi-centre study.

Acknowledgements

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