

# The need for routine pre-operative group and hold samples in elective TURBT and TURP patients

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## Introduction

Transurethral resection of bladder tumour (TURBT) and transurethral resection of the prostate (TURP) are two of the most common urological procedures performed in the UK. In Altnagelvin Hospital, it is common practice for all patients to have a group and hold (G&H) sent pre-operatively. As NICE do not make specific recommendations about which operations should be sent for group and save, these policies are developed locally<sup>[1]</sup>.

Since these policies have been developed, improved instrumentation and techniques have resulted in lower bleeding rates<sup>[2]</sup>. A recent study has shown a 30-day transfusion rate of 3.8%. All patients had large muscle invasive tumours and were anaemic pre-operatively<sup>[3]</sup>. At a cost of £23.77/sample, it costs the trust a significant amount of money annually. We therefore conducted this audit to assess the cost effectiveness of routine G&H for these patients.

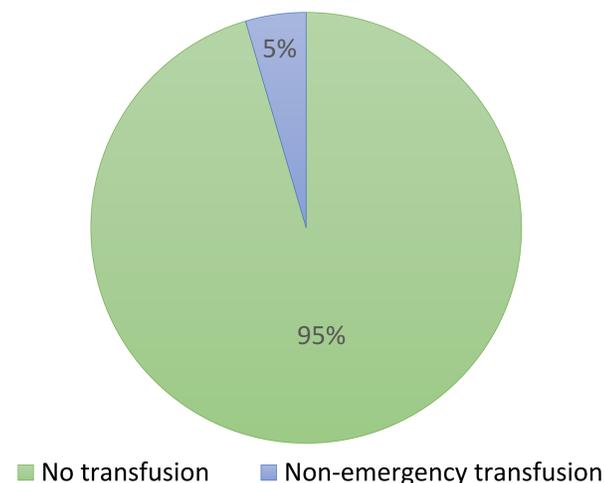
## Methods

A prospective analysis of all patients undergoing TURBT and TURP between 19/09/2019 -19/11/2019 (2-month period) was carried out. We identified a total of 44 patients undergoing TURP and TURBT - TURP (N=17) and TURBT (N=27) using operation lists obtained from theatre every Monday. Those whose procedure was cancelled/delayed were removed. The need for transfusion was confirmed via the electronic labs system where a record of blood products issued is stored. Time of issue of blood products was checked against the date of the operation to identify the temporal relationship between procedure and transfusion. The patients who required blood products were further investigated using patient notes to establish contributing factors and timing of transfusion.

## Results

100% of patients undergoing TURP and TURBT had a pre-operative G&H, with many patients having routine G&H sent both at the pre-assessment clinic and pre-operatively on admission. Of the 44 patients we identified undergoing TURBT or TURP, only 2 patients (4.5%) required a transfusion within 30 days of the procedure. Notably, neither patients required their transfusion in an emergency setting, and no intra-operative transfusions were necessary. The earliest transfusion was carried out 48 hours post-operatively. The two patients requiring transfusion had predisposing risk factors which could have been identified at pre-assessment. Due to the small sample size, we are unable to draw any conclusions between the relative likeliness of TURBT or TURP operations resulting in transfusion.

% of patients requiring a transfusion



### Patient 1: TURBT [TCC Bladder pTa Grade 2]

76 year old man presented with frank haematuria. Ultrasound showed two heterogenous masses measuring 38mm and 24mm. These were staged at stage 2 (muscle invasion), which is considered high risk for haemorrhage<sup>[3]</sup>.

This patient was transfused 2 units post operatively due to ongoing haematuria leading to anaemia. He was haemodynamically stable throughout and was transfused one unit at day 2 and one at day 6. Of note, he had 4 G&H in total. In addition to 2 pre-operative G&H, an additional sample was sent prior to the first transfusion. On day 6, his previous samples were out of date and a further sample was required. A pre-operative G&H did not therefore affect his post-operative care. G&H could have been done when clinical need became apparent.

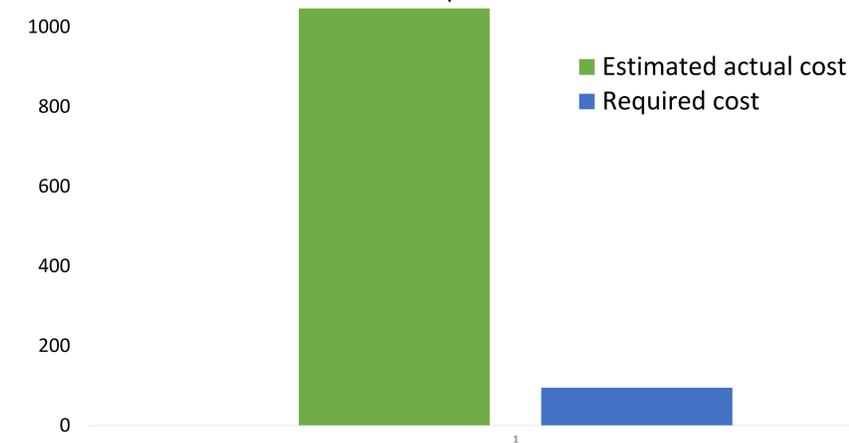
### Patient 2: TURP [benign prostatic hyperplasia]

This patient was transfused at day 5 after having frank haematuria for 4 days. His haemoglobin had steadily declined from 126-87. His transfusion threshold was haemoglobin of 90 due to his significant cardiac history: ischaemic heart disease with previous coronary artery bypass grafting, atrial fibrillation, hypertension, type II diabetes mellitus. In the four days where he continued to bleed, there would have been ample time to send and process a G&H sample before the patient required a transfusion.

## References

1. British Committee for Standards in Haematology ; Milkins, C, Berryman, J. Guidelines for pre-transfusion compatibility procedures in blood transfusion laboratories. *Transfus Med* 2013; 23: 3–35.
2. Rassweiler, J, Teber, D, Kuntz, R. Complications of transurethral resection of the prostate (TURP) – incidence, management and prevention. *Eur Urol* 2006; 50: 969–980.
3. Smith, H., Falconer, R., Szczachor, J., & Ahmad, S. (2018). Routine preoperative group and save for TURP and TURBT – need and cost effectiveness. *Journal of Clinical Urology*, 11(1), 33–37.

Estimated actual cost (£) vs required cost over a two month period



## Discussion

Our study found that pre-operative G&Hs do not improve patient outcomes. No patient in our study required an intraoperative transfusion or became haemodynamically unstable post-operatively. Our results are in keeping with larger studies performed in other centres. A Scottish study has shown a 30-day transfusion rate of 3.8%<sup>[3]</sup>. All those patients had large muscle invasive tumours and were anaemic pre-operatively.

At a cost of £23.77/sample, there is potential to make significant savings without compromising patient care. During the duration of this study, a single pre-operative G&H per patient cost £1045. The necessary cost was £95. This represents a potential saving of £5700 if extrapolated over the course of a year.

We therefore propose repeating this study with a larger sample size. If our results are replicated, we propose a trial withdrawal of G&H for every patient. Instead, the patient could be risk-assessed at pre-assessment and the sample sent on a need basis. Following introduction of this policy, a re-audit should be performed to ensure that patient outcomes are not compromised.

## Future plans

1) Repeat study with a larger sample size over a longer period of time to improve reliability.

2) Liaise with urology team to develop a protocol to risk stratifying patients. Likely criteria include anaemia, muscle invasive tumours and significant co-morbidities.

3) Risk stratify according to protocol at pre-operative assessment. G&H samples only sent on a subset of patients more likely to require a transfusion.

4) Re-audit to ensure patient outcomes are not compromised.