Could best practice tariffs improve the treatment of patients with ureteric stones?

In January 2019, the National Institute for Health and Care Excellence published new guidance on the management of acute ureteric stones (National Institute for Health and Care Excellence, 2019). While most of the recommendations are in keeping with current practice in the NHS, some will require major changes.

Urinary tract stones are one of the most common urological conditions with approximately 6000 patients in England admitted into hospital a year with this condition (Harrison, 2018). Patients with uncomplicated ureteric stones, with no evidence of sepsis or acute renal function deterioration, can be managed conservatively but others may benefit from urgent intervention. At present approximately 62% of cases of acute renal stones are managed conservatively, with 38% requiring emergency intervention (Harrison, 2018).

The decision on whether a patient needs conservative or emergency management is dependent on the size and location of the stone as well as the adequacy of pain control, comorbidities and other patient factors. Definitive treatment is via either extracorporeal shockwave lithotripsy or ureteroscopy, but most patients in the UK who require acute treatment are currently given a temporary ureteric stent before definitive treatment at a later date. Of the 38% requiring intervention, half are managed with an interim ureteric stent (22%), and a quarter have a definitive primary ureteroscopy (11%). Only 3% are managed by definitive extracorporeal shockwave lithotripsy, the remainder usually have an interim nephrostomy (2%) (Harrison, 2018).

This practice is at odds with the new National Institute for Health and Care Excellence (2019) guidance which states that, for the 38% of patients with stones requiring intervention, primary definitive treatment via ureteroscopy or extracorporeal shockwave lithotripsy should be carried out within 48 hours rather than management with an interim stent. The National Institute for Health and Care Excellence (2019) guidance supports prompt definitive management of acute stones as there is evidence that it has superior outcomes over stenting followed by later definitive management. The benefits include avoiding an additional general anaesthetic and procedure, not suffering from ureteric stent symptoms and complications of stents, as well as a faster return to normal life.

The current configuration of emergency surgery provision in NHS trusts often precludes primary definitive treatment of acute ureteric stones. Procedures are typically performed on an emergency list where the lack of a suitable theatre with laser, laser-trained theatre staff and time pressures often lead the surgical team to default to a ureteric stent insertion as a simpler, quicker and more pragmatic option. In addition many units do not have access to an expensive lithotripter, precluding out-of-hours or acute extracorporeal shockwave lithotripsy.

Upfront investment in resource and training is required to facilitate primary definitive treatment. These investment costs are expected to be recouped down the line from avoiding the costs associated with stent use (National Institute for Health and Care Excellence, 2019). However, in today's financial climate, NHS trusts are reluctant to make upfront investments, unless incentivised, making it unlikely that stones will be treated by primary definitive treatment as preferred in the guidance.

NHS funding mechanisms and best practice tariffs

The English NHS operates as a purchaser/provider system, with most health care purchased by around 200 clinical commissioning groups (purchasers) from NHS and foundation trusts (providers). The main mechanism by which health care is purchased is through a payment by results system which accounts for around 60% of acute hospital income (Gershlick, 2016). This works on a principle of nationally determined units of health care (healthcare resource groups), with tariffs attached to each healthcare resource group. The tariffs are based on the national average cost of treating patients in that healthcare resource group and so incentivise providers to reduce costs to below the tariff to retain the difference (Gershlick, 2016).

Payment by results incentivises cost reduction per healthcare resource group, but does not encourage adherence to quality standards. In response to wide variations in the standards of care in the management of patients with a fractured neck of femur Lord Darzi's *High Quality Care For All - NHS Next Stage Review* (Secretary of State for Health, 2008) report introduced the new payment system to:

> **'...address unexplained variation in quality and universalise best practice, we will start to pay prices that reflect the cost of best practice rather than average cost ... which we will introduce where the evidence of what is best practice is clear and compelling.' (Oakley et al, 2017)**

This revised payment system differed from payment by results and introduced a formal financial incentive for complying with known best practice. The base tariff for patients with neck of femur fractures was

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halved and £1335 per patient was made available for meeting seven key ‘best practice’ criteria (Oakley et al, 2017).

Introduction of best practice tariffs resulted in a dramatic improvement in adherence to national guidelines. After introduction for neck of femur fractures, there was a significant improvement in adherence to the best practice tariff criteria for management of a neck of femur fracture (Gershlick, 2016). One of the best practice tariff criteria introduced was ‘time to surgery within 36 hours from arrival in the A&E department to the start of anaesthesia’. The introduction of best practice tariffs saw a dramatic improvement with the median time from the emergency department to theatre reduced from 44 hours pre-best practice tariff to 23 hours post-best practice tariff (P<0.005) and the proportion of patients being operated on within 36 hours of admission increase from 36% pre-best practice tariff to 84% post-best practice tariff (P<0.005) (Oakley et al, 2017).

Best practice tariffs have since been rolled out across 50 diseases and procedures, including cholecystectomies, strokes or transient ischaemic attacks and non-ST elevation myocardial infarctions among others, and are recognized as an effective tool to elicit change in clinical behaviour in both the emergency and elective settings (Gershlick, 2016). As an example, the Department of Health introduced best practice tariffs for day-case cholecystectomies in 2010 with an immediate relative increase of one-third (from 24.3% to 32.9%) of cholecystectomies performed as day cases from 2009–10 to 2010–11 (McDonald et al, 2012).

Ureteric stone tariffs

Current basic tariffs covering emergency ureteric stone procedures are £449 for extracorporeal shockwave lithotripsy (per session), and £2129–3464 for ureteroscopy depending on comorbidities. The 2017–18 and 2018–19 National Tariff Payment System review also saw the introduction of a best practice tariff which stipulated a target of 60% of ‘Ureteroscopic extraction of calculus of ureter’ to be managed as day-case procedures (NHS England and NHS Improvement, 2016). ‘Day-case procedures’ are those where the patient is discharged before midnight on the same day of the procedure, simply incentivising discharge as opposed to prompt definitive management.

Best practice tariffs have proved effective at changing norms of clinical management in a range of specialties. Best practice tariffs should be used where they would be high impact (i.e. high volumes and significant variation in practice) and where there is a strong evidence base on what constitutes best practice (Gershlick, 2016).

Renal stones are high volume, affecting 12.5% of the population at some point in their lives and resulting in 6000 emergency hospital admissions a year (Harrison, 2018; National Institute for Health and Care Excellence, 2019). There is significant national variation in management and there is strong evidence regarding best practice. If clinicians believe that prompt primary definitive treatment of ureteric stones should be the norm across the NHS, evidence suggests that best practice tariffs would be a useful tool to achieve this.

Conclusions

There is currently a wide variation in the management of patients with ureteric stones in the UK with most acute presentations requiring intervention being managed with ureteric stents. Few trusts are set up to provide primary definitive treatment within 48 hours of presentation and will struggle to make the investments required despite long-term cost neutrality.

Prompt treatment of ureteric stones results in better outcomes and so the NHS should consider ways to incentivise a beneficial change in practice. Best practice tariffs are a well-validated model for incentivising compliance with best practice and are one of the few tools that national policy makers have at their disposal. There is evidence of sustained improvement in the care of patients across a range of emergency and elective care.

KEY POINTS

- Around 38% of patients with ureteric stones require an emergency intervention and of these half are managed by placement of a temporary ureteric stent.
- This practice is at odds with the new National Institute for Health and Care Excellence guidance that stones requiring intervention should be managed by primary definitive treatment.
- The use of best practice tariffs has resulted in a dramatic improvement in standards of care for other conditions such as neck of femur fractures.
- Best practice tariffs could improve the treatment of patients with ureteric stones.

If we truly believe that these National Institute for Health and Care Excellence guidelines are in the best interests of patients, best practice tariffs should be considered as a practical tool to prompt a sustainable change in clinical practice and help urology departments deliver the highest standards for their patients. **BJHM**

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