

Letters

WRITE TO THE EDITOR AT BJU INTERNATIONAL, 47 ECCLES STREET, DUBLIN 7, IRELAND

ROLE OF COMPUTED TOMOGRAPHY WITH NO CONTRAST MEDIUM ENHANCEMENT IN PREDICTING THE OUTCOME OF EXTRACORPOREAL SHOCK WAVE LITHOTRIPSY FOR URINARY CALCULI

Sir,
We were interested in reading this article [1]; as the authors mentioned, it is the largest reported *in vivo* study assessing the use of non-contrast CT in predicting the outcome of ESWL. They showed the use of mean stone density to predict both the treatment outcome and the possible stone composition. However, we would like to clarify some points with the authors. First, what were the criteria for repeating or stopping ESWL in the study? What was the presumed clinical end-point for treatment, e.g. at what fragment size would they stop further ESWL? Did they decide it immediately after the post-treatment radiography or at 2 weeks before the next treatment session? As the primary outcome variable of this study was the number of sessions required for each stone to become cleared or in clinically insignificant residual fragments, it was crucial to define how they decided when to stop or repeat ESWL. Moreover, were the clinicians in charge of the ESWL unaware of the result of non-contrast CT? This is especially important if the decision of stop or repeat ESWL just relied on the clinical judgement of the attending clinician.

Also, the authors assessed the relationship between the composition of stone and the mean stone density measured in Hounsfield units (HU). In the 72 patients with calculus fragments collected, two were found to have pure uric acid stones. However, the authors only mentioned that plain radiography was used for assessing stone fragmentation and treatment outcome. As uric acid stone is known to be radiolucent on plain radiography, it would be difficult, if not impossible, to assess the treatment outcome by this method. Therefore, was the assessment of treatment outcome for these two patients accurate?

Was there any other patient with radiolucent stone also involved in the study?

Last, the authors recommended that for all calculi (<2 cm) with mean stone density of 750 HU, ESWL should be the preferred treatment. However, the authors seemed to forget that they had excluded lower calyceal stones and upper ureteric stones of >1 cm in their analysis. Therefore, they should not extrapolate their results to stones at all sites and of <2 cm. Actually, from the result of the Lower-Pole Study Group, the stone clearance rate for lower calyceal stones of >10 mm was quite poor [2].

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- 1 **Gupta NP, Ansari MS, Kesarvani P, Kapoor A, Mukhopadhyay S.** Role of computed tomography with no contrast medium enhancement in predicting the outcome of extracorporeal shock wave lithotripsy for urinary calculi. *BJU Int* 2005; **95**: 1285–8
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Sir,
We read with interest the article by Gupta *et al.* [1], which is the largest *in vivo* study of treatment outcomes comparing attenuation values of urinary calculi. In particular the linear relationship of stone density with the number of sessions required for clearance (in Fig. 1) is encouraging as a predictor in the *in vivo* setting. We have a few key points to add to their findings.

It is clear from large-scale studies, including this one, that stone size, density and machine variables are key factors in predicting fragmentation. However, the concept of isolating stone density alone as a predictive factor for fragmentation will result in misleading conclusions in the practical setting. Size and density are not mutually exclusive as predictors but linked in the context of CT attenuation values. This is reiterated by several studies; in one such, Parienty *et al.* [2] found that stones of <5 mm in diameter had a lower attenuation value than larger stones (5–9 mm) of the same composition scanned at the same section thickness. In another study, Chee Saw *et al.* [3] scrutinized 127 human urinary calculi using a model, based on the physics of helical CT, to predict the effect of scan collimation width and stone size on measured attenuation. They found a definite effect of stone size (of the same density) on attenuation measurements. We are concerned that Gupta *et al.* [1] used diameter and stone density as independent variables in their multivariate analysis. The above reports clearly show that the size of the stone may affect the attenuation reading. This may produce misleading results.

It is worth considering that when assessing fragmentation alone there are sufficient published data for a preliminary multivariate scoring system for stone fragmentability. This is exemplified by the multivariate analysis of Abdel-Khalek *et al.* [4] assessing patient age, stone size, location, number, radiological renal features and congenital renal anomalies. Their regression model for prognostic factors determining stone clearance after ESWL of renal calculi predicted the probability of success with ESWL with an accuracy of 87%.

Furthermore, incorporating a multivariate scoring system approach into treatment policies based on large-scale studies was successful in expressing stone characteristics

as determinants of treatment failure [5]. Not only is patient selection important but so is the specific policy and machine used. It was shown by Grenabo *et al.* [5] that when ESWL is used for treating renal stones, the treatment policy has as great an effect on the success rate as optimal equipment and proper patient selection.

Prognostication of fragmentability is a complex science and studies assessing single isolated variables such as stone size and density seem to be misleading. To gain optimum success in prediction we suggest that a multivariate scoring system may be the answer.

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TECHNICAL CONSIDERATIONS WHEN OBTAINING AND INTERPRETING PROSTATIC BIOPSIES FROM MEN WITH A SUSPICION OF EARLY PROSTATE CANCER

Sir,

We read with interest the excellent article by Chappell and McLoughlin on the many aspects of prostatic biopsy [1]. However, an important omission was the recently described extensive transperineal template (ETT) biopsy [2,3]. This technique was used in men with a clinical suspicion of prostate cancer in whom multiple sets of TRUS biopsies prove benign or inconclusive. In our series of 60 cases, the cancer detection rate was 38% (in preparation), which is similar to that achieved by others using a similar technique [3]. The transperineal approach enables the anterior prostate to be adequately targeted; in our series, 14 of 23 men with cancer had anterior tumours. Anterior tumours occur in 21% of prostate cancer cases [4], and as the authors describe, this region is difficult to biopsy using the transrectal techniques.

The transperineal route has potential benefits over transrectal saturation biopsies with respect to complications. Rectal bleeding and discomfort is avoided, and pain in the perineal skin is prevented by local anaesthetic at the end of the procedure. Urethral bleeding is also minimized as biopsies are taken in parallel with the urethra. The periurethral transition zone and midline of the peripheral zone, two sites frequently under-sampled [5], can be targeted with no risk of haematuria caused by traversing the urethra. There is also evidence to support the likely reduction in the incidence of sepsis in transperineal rather than transrectal prostate biopsies [6].

The disadvantages of this technique include the need for the brachytherapy stepping unit and template, although with more centres using brachytherapy and with similar equipment available for prostate cryoablation and high-intensity focused ultrasound this will become more readily available. The silicone offset, which lifts the prostate anteriorly during the procedure, is uncomfortable and after multiple transrectal biopsies under local anaesthesia most men expressed a preference for general anaesthetic. There is a small risk of malignant seeding of the perineal skin, and although this is exceedingly rare, its occurrence indicates a poor prognosis [7]. ETT biopsies maybe useful

in the difficult group of men with a rising PSA level where TRUS biopsies are not diagnostic.

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ALLOPURINOL PROVIDES LONG-TERM PROTECTION FOR EXPERIMENTALLY INDUCED TESTICULAR TORSION IN A RABBIT MODEL

Sir,

I read with interest the article by Kehinde *et al.* [1]; they reported that administering allopurinol before reperfusion of the testis is associated with a prolonged reduction of free radical level and maintenance of a good Johnsen score. The authors stated that nearly all previous studies reporting beneficial effects of antioxidants were based on short-term observations and only one study to date reported long-term protective effects of antioxidants on the testis [2]. However, we

also reported the long-term protective effects of 3-aminobenzamide (3-AB, an inhibitor of polyADP-ribose polymerase, PARP) on histological damage in testicular ischaemia-reperfusion injury [3].

Testicular torsion is a urological emergency; the salvage rate is directly proportional to the duration and the degree of torsion, and early diagnosis with detorsion is the current management for preserving spermatogenesis and fertility [4]. One strategy to reduce oxidative stress involves the elimination of reactive oxygen species (ROS) by ROS scavengers. It was reported that treatment with ROS scavengers had a palliative effect on the histological changes in the testis that had had 1 h of experimental torsion, but there was no significant rescue after 1 h of testicular ischaemia [2,5]. However, we showed that 2 h of torsion with a 720° rotation of the testis, followed by 4 h of detorsion caused a significant increase in biochemical variables, including malondialdehyde levels, nitric oxide content and myeloperoxidase activity in testicular tissue, related to ischaemia-reperfusion injury and administration of PARP inhibitors before detorsion improved these biochemical variables [6].

Kehinde *et al.* [1] reported that, to their knowledge, only one study to date reported long-term protective effects of antioxidants on testicular torsion [2]. However, a recent study from our institution using a rat model of 2 h of testicular torsion also showed that inhibiting PARP decreases histological damage after testicular torsion followed by 60 days of recovery [3]. To our knowledge, we showed, for the first time, that 3-AB, an inhibitor of PARP, had a beneficial effect on long-term histological damage in testicular ischaemia-reperfusion injury [3]. When 3-AB was administered before detorsion, the histological factors, including mean seminiferous tubular diameter, germinal epithelial cell thickness and mean testicular biopsy score, were significantly maintained.

Unfortunately, Kehinde *et al.* did not mention our study [6] that reported the protective effect of PARP inhibitors on long-term (60 days) histological damage in testicular ischaemia-reperfusion injury. In addition, the data in their Table 2 are incorrect; the authors noted that the rabbits in group C had 60-min ischaemia followed by left orchidectomy (no reperfusion), but they also reported the mean values of long-term results of group C.

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A PROSPECTIVE RANDOMIZED TRIAL COMPARING TRANSURETHRAL PROSTATIC RESECTION AND CLEAN INTERMITTENT SELF-CATHETERIZATION IN MEN WITH CHRONIC URINARY RETENTION

Sir,

We read with great interest the article by Ghalayini *et al.* [1], which explored whether a preliminary period of clean intermittent self-catheterization (CISC) before TURP improves bladder contractility and surgical outcome in men with chronic urinary retention. The ability to predict positive outcomes after TURP is paramount in deciding who will benefit after surgery. Whereas numerous studies explored the predictive factors of outcome after TURP, few have assessed ways of improving the outcome. The findings of the authors are encouraging. From our experience with Afro-Caribbean patients [2] who subsequently had either TURP or open simple

retropubic prostatectomy, we found that those men who were primed with CISC (while on the waiting list) had a better functional outcome than their 'unprimed' matched counterparts. However, the presence of upper tract dilatation was not always associated with high end-void and end-fill bladder pressures, but when the upper tract dilatation was associated with high end-void and end-fill bladder pressures the men had a better outcome after surgery. The quality-of-life issue of reduced LUTS was one of the prime reasons for using the CISC approach in our patients. The observed improvement after surgery in our small series was encouraging and we were pleased to see this ratified in a randomized trial.

We agree with the findings of Hakenberg *et al.* [3] that age is an important predictor of general improvement in symptoms and flow rates after TURP. However, from our observations, age was not a significant factor in those men who had preoperative bladder priming with CISC. This seems to be similar to the findings of the present report [1]. From our findings we concur with the authors' observations and would recommend bladder priming with CISC before TURP in patients who are on moderate to long waiting lists. Clearly, larger multicentered studies would further clarify these observations and may help to further define the concept and practical value of bladder priming using CISC before TURP.

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