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Urological manifestations of human immuno-deficiency virus (HIV): observations in Africa

B. Elem *Alexandra Healthcare NHS Trust, Woodrow Drive, Redditch, Worcs B98 7UB*

Introduction: The rising incidence of HIV infection has significantly affected urological practice especially where the viral infection has reached an epidemic proportion. The results of a prospective study undertaken in Zambia, a country with an ongoing HIV epidemic, to discern the urological manifestations of this viral infection is presented.

Patients and methods: During a 3-year period (1991–1993) the HIV status of 595 consecutive adult urology patients was determined by an HIV serology test. The possible effects of this viral infection on the presentation and prognosis of their urological disorders were analysed.

Results: The most significant urological impact of HIV infection is the emergence of an hitherto unknown clinical syndrome, characterized by haematuria and painful frequency without urinary infection. The cystoscopic appearance includes uniformly congested mucosa with a normal capacity. Histologically, there is an interstitial cystitis-like picture with no mast cells. The phenomenon was observed only in HIV-infected patients. During the study period, significantly more patients with urethral stricture presented with peri-urethral fistulae. Compared to the overall HIV seropositivity of 45% in patients with urethral stricture, 95% seropositivity was observed in cases with peri-urethral fistulae. A phenomenal rise in the prevalence of Fournier's gangrene also occurred during this period; as many as 80% of these cases had associated HIV infection. HIV infection was present in 50% of male infertility and 58% of epididymo-orchitis cases; the latter group frequently developed scrotal abscess. All cases of peno-scrotal Kaposi's sarcoma had positive HIV serology.

Conclusions: Most of the clinical manifestations of HIV on the urinary tract appear to be due to the increased propensity of opportunistic microbial infection in the infected population. The exact role of the virus in the genesis of haematuria frequency syndrome, however, remains unclear. The absence of genito-urinary lymphomas and tuberculosis awaits meaningful explanation. Response to treatment of the urological disorders showed no difference between the HIV infected and uninfected groups.

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Commencing alpha blockers for patients with cardiovascular disease – recommendations for safe prescribing

N.A. Watkin, J.A. Vale and R. O'N. Witherow *Department of Urology, St. Mary's Hospital, Praed Street, Paddington W2 1NY*

Introduction: Alpha-blockers are prescribed increasingly for the management of bladder outflow obstruction. However, many patients will already be taking vasoactive drugs for co-existing cardiovascular disease, and there are no clear guidelines as to when a patient should be reviewed by a cardiologist before therapy.

Methods: Questionnaires (235) were sent to randomly selected consultant cardiologists and urologists, posing a series of common clinical situations and asking them to comment on the need for discussion or review before treatment; 70 of 120 urologists (response rate 58%) and 53 of 115 cardiologists (response rate 46%) returned completed forms.

Results: Most urologists were willing to prescribe alpha-blockers in patients with treated hypertension (66%), mild heart failure (65%), or angina (49%), without informing a cardiologist. However, most cardiologists wished to be informed before instigation of the same treatment; 55% of cardiologists considered that patients with severe heart failure should be formally reviewed before alpha-blocker therapy, but only 15% thought that alpha-blockers were contra-indicated in this group, compared with 34% of urologists. Sixteen urologists stated that

the initiation of treatment, and the monitoring of blood pressure was left to the GP.

Conclusions: Patients with severe heart failure need formal assessment by a cardiologist before treatment. Ideally, a patient's GP or cardiologist should be notified of the intent to start alpha-blockers if there is a history of mild heart failure, hypertension or angina, so that arrangements can be made to monitor the blood pressure.

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Suprapubic and transurethral pressure flow study in the diagnosis of bladder outflow obstruction

B. Di Pasquale and S. Carter *Hammersmith Hospital Trust, Charing Cross Hospital, Fulham Palace Road, London W6 8RF*

Introduction: Suprapubic puncture for intravesical pressure measurements has the advantage of leaving the urethra untouched during pressure flow studies. We have previously found this slightly more invasive technique to be better tolerated than are conventional transurethral studies. The objective of this study was to compare the two methods.

Patients and methods: Transurethral (TU) and suprapubic (SP) pressure flow studies were undertaken in 35 men with lower urinary tract symptoms (mean age 64.2 years, range 41–79). In patients with a full bladder, a 4 Ch pressure catheter was placed in the bladder through a 14 G spinal needle under ultrasound control. After the first pressure flow study, a 10 Ch double-lumen transurethral catheter was inserted and a second pressure flow study recorded. In patients with an empty bladder the procedure was done in reverse sequence. In all studies the bladder pressure was measured with the suprapubic line. Maximum flow rates (Qmax), Pvoidmin, PdetQmax, urethral resistance algorithm (URA) and linear passive urethral resistance (LPURR) were compared.

Results:

	Mean (SD)		P (Wilcoxon signed rank test)
	Suprapubic	Transurethral	
Qmax (mL)	10.9 (5.1)	8.9 (4.3)	0.003
Pvoidmin (cmH ₂ O)	50 (20)	51 (21)	n.s.
PdetQmax (cmH ₂ O)	74 (27)	78 (28)	0.037
URA	36 (18)	42 (17)	0.006

Twenty-one of 35 patients (60%) were in the same LPURR classes: in 11 men (31%) the LPURR classes were lower during SP P/F study, and in three (8.6%) the LPURR were higher. Sixty-seven percent were classified in the same group by both techniques.

Conclusions: Significant differences were found between SP and TU studies and as a result, the classification of obstruction may be altered. TU studies tend to indicate greater obstruction. Interpretation of urodynamic studies should take into account the technique used.

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Does an increase in nocturnal post-micturation residual volumes contribute to nocturnal frequency in men with bladder outlet obstruction due to BPH?

Jeremy Crew, Timothy O'Brien, Helen Doll and David Cranston *Department of Urology, Churchill Hospital, Headington, Oxford OX3 7LJ, UK*

Introduction: The causes of nocturnal frequency in men with bladder outlet obstruction secondary to BPH are not fully understood. Detrusor instability and nocturnal polyuria may be contributing factors. This study looked at changes in post-micturation residual volume (PMR) at night to establish whether increased nocturnal PMRs contribute to nocturnal frequency.

Patients: In 22 men, 232 PMRs and flow rates were measured over the 24 h before prostatectomy. All patients had symptoms and investigations suggesting bladder outlet obstruction. PMRs were measured by one investigator using real-time B-mode ultrasonography. Mean values of daytime (12.00–18.00 hours) and night-time (24.00–06.00 hours) PMRs were compared using the Wilcoxon matched-pairs signed-rank test.

Results: PMRs increased by a mean of 53% at night ($P < 0.001$) and mean urine volume per void increased by 42.5% at night ($P = 0.002$). The bladder volumes before micturition also increased at night by a mean of 45.4% compared with daytime ($P < 0.001$). The PMR, as a percentage of the pre-void bladder volume, increased from a mean of 44% to 48%, but this was not statistically significant ($P = 0.31$). Flow rates were unchanged at night (mean Qmax 9.2 mL/s, $P = 0.571$). There was no difference between mean daytime and night-time urine output. No association was found between the measured variables and the severity of nocturnal frequency.

Conclusions: The study shows that PMRs increase at night in patients with bladder outlet obstruction and therefore may contribute to nocturnal frequency in men with symptomatic BPH. Nocturnal polyuria appeared not to be an important factor in our sample.

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Anti-platelet and non-steroidal anti-inflammatory drugs in transurethral surgery of the prostate and bleeding complications

R. Donat, A. McNeill and K.G. Brame *Scarborough Hospital, Woodlands Drive, Scarborough YO12 6QL*

Introduction: Peri-operative bleeding complications during TURP are a major cause of morbidity and mortality surrounding this operation. Anti-platelet drug therapy (e.g. Aspirin) and the use of NSAIDs are both common in patients undergoing such surgery and are both thought by many urologists to exacerbate the tendency to bleed.

Patients and methods: We have retrospectively analysed a series of 775 patients for the incidence of such drug therapy and the associated need for blood transfusion. The drugs were continued peri-operatively according to departmental policy. All patients underwent TURP carried out by one surgeon.

Results: Eighty-seven patients (11.2%) took Aspirin and 16 patients (2.1%) Dipyridamole. NSAIDs were taken by 68 patients (8.8%) and 15 patients (1.9%) were given peri-operative low-dose Heparin. A blood transfusion was required in 90 patients (11.6%). Medication with Aspirin, Dipyridamole, NSAIDs and Heparin, given either as a single dose or in combination, did not result in increased blood transfusion rates. The operating time was significantly longer in patients requiring a transfusion (mean 68.8 min) than those who did not (mean 36.9 min) ($P < 0.001$). Additionally the weight of prostatic tissue resected was higher in patients needing transfusion (mean 58.3 g versus 20.3 g) ($P < 0.001$).

Conclusions: The results show that neither anti-platelet agents nor NSAIDs are associated with higher transfusion rates, but emphasize the importance of minimizing the operative time. This is particularly important in patients with cardiovascular risk factors with an increased risk of complications related to anaemia and blood transfusion. We recommend the continuation of anti-platelet drug therapy peri-operatively.

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Does resection size at TURP affect outcome?

S. Sharma, R. Calleja, A. Simpson, N. Burgess, K.N. Bullock, P.T. Doyle and A. Doble *Department of Urology, Addenbrooke's NHS Trust, Cambridge CB2 2QQ*

Introduction: At TURP, the resection of tissue is incomplete due to a variety of factors. Can a critical percentage of resected tissue, that ensures a satisfactory outcome, be identified?

Patients and methods: Patients undergoing TURP for uncomplicated bladder outlet obstruction secondary to BPH were studied. Pre-operatively an I-PSS, including a quality-of-life score due to urinary symp-

toms was completed, the residual volume and urinary flow rate determined and prostate volume measured by TRUS. At operation the resected tissue was weighed before multiplying by a constant ($\times 1.2$) to allow for shrinkage, to obtain the resection volume. The resection percentage (RP) was then calculated. Patients were re-evaluated 3 months post-operatively. Fifty patients were entered into the study.

Results: The median resection percentage was 52% (17–91.5%). The median pre-operative I-PSS of 22 (range 8–33), and quality-of-life score of 5 (2–6), fell to 5 (0–15) and 1 (0–3), respectively at 3 months post-operatively. Eight patients had an unsatisfactory outcome (I-PSS > 7 or a quality-of-life > 1), due to persistent irritative symptoms in seven. There was no correlation between RP and outcome using I-PSS ($r = 0.34$, $0.1 < P < 0.5$) and quality-of-life scores ($r = 0.17$, $P > 0.5$).

Conclusions: The quantity of prostate tissue resected at TURP does not correlate directly with outcome. An unsatisfactory outcome was usually due to persistent irritative rather than obstructive symptoms. The optimal amount of resected tissue to clear the bladder outlet remains unknown, yet the rate of second resection in the low RP group is awaited with interest.

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Routine post-operative haemoglobin testing is unnecessary following TURP

D. Hrouda and S.J. Hampson *Department of Urology, St. George's Hospital, London SW17 0QT*

Introduction: At present, patients undergoing TURP have their haemoglobin assessed routinely on the first post-operative day. We assessed the feasibility of introducing selective post-operative haemoglobin testing based on the surgeon's subjective assessment of the severity of blood loss at the time of surgery.

Patients and methods: One hundred and forty-five consecutive patients (mean age 69 years) who underwent TURP were included in the study. At the end of the TURP the surgeon recorded whether he felt a post-operative haemoglobin check would be necessary on the basis of the per-operative bleeding. All of the patients then had their post-operative haemoglobin measured at 24 h.

Results: Of 145 patients, nine were excluded on the basis of incomplete data. The mean reduction in haemoglobin was 17 g/L (range 0–68); 5.5% of patients required a mean post-operative blood transfusion of 2 units. The surgeons requested post-operative haemoglobin in 14% of patients and in all but one of the patients who received a blood transfusion. This was statistically significant ($\chi^2 P < 0.001$).

Conclusions: The results indicate that surgeons are surprisingly accurate at predicting which patients will require a post-operative blood transfusion, with a relative risk of 9.1 (5.1–16.2) vs 0.14 (0.02–0.87), a 100-fold difference. Selective post-operative haemoglobin testing is justified with a resultant cost-saving of £490 per year in an average urology department.

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Cardiovascular effects of endoscopic laser ablation of the prostate

M.P.J. Wright, J. Adams, A.G. Timoney and P. Abrams *Bristol Urological Institute, Southmead Hospital, Bristol*

Introduction: Laser prostatectomy is perceived as a safer and less invasive modality of treatment than TURP for BPH. To evaluate the potential cardiovascular stress placed on patients undergoing this procedure, various haemodynamic parameters, including cardiac output and stroke volume, were studied. We present the results in 31 patients.

Patients and methods: Thirty-one men, aged 59–84 years (mean 72.4) were studied; 11 were ASA grade 1, 15 grade 2 and five grade 3. Following a standard anaesthetic and lasing protocol, they all underwent a sidfire laser ablation of the prostate. Pulse and blood pressure were continuously monitored and recorded. In addition, cardiac output and stroke volume were measured at set intervals using a transcutaneous, suprasternal Doppler probe; pre- and post-operative ECGs were also recorded.

Results: The mean operative time was 23 min (range 15–32). In 30 of the patients, the change in cardiac output was < 9% and in stroke volume was < 11%. In one patient there was a 32% change in cardiac output associated with melt-down of the fibre tip. There was a slight increase in the mean pulse and blood pressure on insertion of the suprapubic catheter for irrigation, but no significant change during the lasing part of the procedure. There were no changes in ECG.

Conclusions: These data suggest that there is no significant cardiovascular stress in patients undergoing endoscopic laser ablation of the prostate and help to confirm it as a safe technique.

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Results of a European multicentre study evaluating the efficacy of an interstitial laser coagulation device

D. Gillatt, A. Timoney, H. Whitfield, R. Muschter and J. de la Rosette *Bristol Urological Institute, Southmead Hospital, Bristol*

Introduction: Interstitial laser coagulation is a minimally invasive treatment for patients with bladder outflow obstruction (BOO). A specially designed laser fibre with a diffuser tip is inserted directly into the prostatic lobe. The diffused laser light coagulates a volume of tissue around the fibre which is gradually resorbed after the treatment. The prostatic urethra is preserved, thus reducing irritative symptoms after the treatment.

Patients and methods: Eighty patients were treated using a low-power 830 nm diode laser system (Indigo Medical, Palo Alto, CA) in six different centres in Europe. All patients had BOO symptoms. Inclusion criteria were an AUA score > 12, a maximum flow rate < 12 mL/s and a post-void residual volume < 300 mL. Treatments consisted of a 4-min treatment cycle per prostatic puncture. Approximately one fibre was placed for each 5–10 mL of prostatic tissue. Treatments were carried out under local, spinal or general anaesthesia.

Results: AUA scores improved from 20 to 8.6 and 7.9 at 3 and 6 months after treatment. Maximum flow rates improved from 7.9 before to 14.5 and 14.9 at 3 and 6 months after treatment. The residual volume decreased from 99 mL before to 55 and 41 mL at 3 and 6 months. No major complications such as impotence or incontinence were seen in any of the patients.

Conclusions: Interstitial laser coagulation using the Indigo 830 is an effective minimally invasive treatment for patients suffering from BPH

complaints. It is a simple treatment with a wide range of indications, including high-risk patients and those with large prostates.

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Prostatic thermotherapy using Thermex II; 142 cases followed to 3 years

G.P.C. Dawkins, N.W. Harrison, H. Mostafid and W. Ansell *Brighton General Hospital, Elm Grove, Brighton, East Sussex*

Introduction: Transurethral thermal treatment for the management of symptomatic BPE associated bladder outlet obstruction remains controversial. We report the results of a prospective study of radiofrequency (RF) prostatic thermal treatment at 3 years.

Patients and methods: A total of 142 patients with lower urinary tract symptoms attributable to BPE-bladder outlet obstruction were assessed by a Madsen symptom score (SSC), peak urinary flow rate (PUFR) and residual urine (RV). A subgroup of patients had pressure-flow studies (PFS) and urethral pressure profilometry performed before and 6–24 months after treatment. Treatment was offered on the basis of an SSC > 8, PUFR < 15 mL/s for a voided volume 150–400 mL and RV < 200 mL. Treatment was a 3-h single session of per-urethral RF using the Thermex II system (Direx Medical Systems, Tel Aviv, Israel).

Results: Results are given for before 12, 18, 24 and 36 months after treatment for SSC, PUFR & RV. PFS results are given for before and 24 months after treatment. Treatment failure was defined as the patient whose clinical state still fulfilled the initial entry criteria, or who had required further treatment such as TURP or a second thermal treatment.

	12 months	18 months	2 years	3 years	
Success/Fail/Lost (%)	70/1/9	60/22/17	51/27/21	28/40/34	
Mean (SD)	Before	1 year	2 years	3 years	P
SSC	13 (3)	4 (3)	4 (3)	5 (3)	
P Det.QMax, cmH ₂ O	110 (39)	—	97 (39)	—	NS
RV (mL)	83 (64)	64 (126)	57 (41)	73 (51)	NS

Conclusions: The initial promising result declined steadily with the greatest decrease after 2 years. Objective changes were subtle and not durable beyond 2 years in at least 40% of the patients. There may be a role for this type of treatment for the patient with short life expectancy or as a temporary measure whilst awaiting surgery. The importance of longer-term studies is shown.