Audit

What is important to patients receiving extracorporeal shock-wave lithotripsy for urinary tract calculi?

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Introduction: Patients' experience and expectations are paramount in the current era of clinical governance. However, there is lack of published information on patients' expectations from extracorporeal shock-wave lithotripsy (ESWL) treatment for renal stone disease. We conducted a survey to quantify what aspects of ESWL are important purely from the patients' perspective.

Patients and Methods: Postal questionnaires were sent out to all patients who attended our unit for ESWL treatment for renal stone disease. The questionnaire referred to 15 aspects of ESWL treatment. Patients were asked to rate each aspect based on a numerical scale from 1 to 10 (1 – least important; 10 – most important).

Results: We posted 340 questionnaires and received 208 valid replies (61%). Stone clearance was statistically the most important aspect of treatment. Staff attitude and explanation of the procedure and outcomes were rated highly. To our surprise, pain control was rated only 8th.

Conclusions: Patients' priorities may be different to ours. Surveys like this allow ones to put the appropriate 'weight' on the results of patient satisfaction surveys in order to allocate resources and improve service appropriately.

Key words: Extracorporeal shock-wave lithotripsy – Urinary tract calculi – Patient expectations

Extracorporeal shock-wave lithotripsy (ESWL) has been a major advance in urology. It has dominated the management of renal stone disease since its introduction in 1980.¹ It is non-invasive, effective and very well tolerated. Despite its wide-spread clinical application, there are no studies in the medical literature looking into patients' priorities and expectations from such treatment. We conducted a patient questionnaire survey aimed at determining what aspects of treatment are important to patients and quantify their importance purely from the patient's perspective.

Patients and Methods

The study took place at the Sutton lithotripsy unit. The unit runs four lithotripsy sessions a week and treats an average of four patients per session (new and follow-up patient episodes). We cover a large catchment area treating patients from St George's, Mayday, Epsom and St Helier, Surrey and Sussex NHS Trusts. A Dornier Compact-S lithotripter is used in the unit. It is regularly serviced every 6 months.² Patients awaiting lithotripsy are sent out information leaflets regarding the location of

Figure 1 The mean scoring of different aspects of lithotripsy treatment (Appendix 1).

the unit and details about the procedure and aftercare. They are given a contact telephone number for any concerns that may have and also to reschedule their appointment should that be necessary. At each session, the patients are attended by a nurse, a superintendent radiographer and a urology trainee. They are interviewed and consent obtained before treatment. A standard protocol for pain control is followed unless otherwise indicated. The protocol involves oral paracetamol (1 g) and codeine phosphate (30 mg), sublingual feldene (40 mg) and intravenous pethidine (50–100 mg). Intravenous sedation with midazolam (1.25–2.5 mg) and stemetil (10 mg) anti-emetic are given at the same time. Additional sedo-analgesia is given during treatment as required. Occasionally, patients are given general anaesthesia or acupuncture.

All patients who attended the Sutton lithotripsy unit between August 2000 and August 2001 were identified by

the hospital Patient Administrative System. A questionnaire with clear instructions was posted out to all patients (see Appendix 1) in October 2001. The questionnaire consisted of 15 sections each corresponding to an aspect of ESWL treatment. There was a final section for any additional comments. Patients were asked to quantify how important were these aspects of treatment to them, based on a numerical analogue scale of 1 to 10 (1 – least important; 10 – most important). The data were collected and analysed using the Sigma-Stat 2.0 software programme. The Mann-Whitney rank sum test was used to compare the importance of different aspects of treatment ($P < 0.05$).

Results

A total of 340 questionnaires were sent out and 208 appropriate replies were received, corresponding to a

61% response rate. Patients' priorities were very variable and most aspects of treatment were scored widely from 1 to 10. Stone clearance scored the highest with a mean of 9.434 (range, 2–10; SD 1.101). It was statistically more important compared to all other aspects of treatment ($P < 0.05$). Staff attitude, with reference to friendliness and efficiency, scored highly (means of 8.985 [SD 1.285] and 9.186 [SD 1.057], respectively). Provision of adequate information regarding the treatment and its outcome/adverse effects was equally important (mean 9.123; SD 1.211). Pain control was ranked only 8th (mean 8.515; SD 1.845). At the other end of the spectrum, the need for sedation during treatment was statistically the least important factor (mean 6.562; SD 2.690) as shown in Figure 1.

Discussion

The questionnaire was intended to cover the whole patient experience of the lithotripsy service. The uniformly high scores may reflect appropriate choice of questions but they may also reflect a reluctance to give low ratings. The relative results may be more informative than the absolute ones.

Stone clearance is understandably given top priority by patients, with 64% giving this the highest score of 10. Information about stone clearance rates following ESWL must be given to patients before treatment and should give a realistic impression of the likelihood of stone clearance. If expectations are too high disappointment will follow.⁸

The statistically equal and high rating given to staff attitude and information gives emphasis to the importance of both these factors. The relatively low priority given to pain control was not anticipated. Pain control is the most commonly reported and addressed aspect of treatment in the medical literature. Such reports are purely from the clinician's perspective. To our knowledge, no studies have so far assessed the importance of pain control during ESWL from the patient's perspective. Evidence from our study suggests that pain control is not a priority for the patient. This, however, may reflect the effectiveness of our pain control protocol. Nevertheless, it appears that patients might be prepared to accept some pain at the expense of other factors that they consider more important. Such factors would include appropriate staff attitude, adequate information regarding the treatment and stone clearance. Of interest is the fact that the scoring for staff friendliness and provision of adequate information ranged between 4/5 and 10. This suggests that although they are not as important as stone clearance, they carry some weight to

all the patients with no exception and should be given priority when planning the set-up of lithotripsy units.

Conclusions

There has recently been increasing pressure on the medical profession for a patient-centred medical care.³ Satisfaction questionnaire surveys are the mainstay of these attempts. In the medical literature, there is a small group of studies looking into aspects of ESWL treatment that clinicians consider important.^{4,5} These are pain control as a performance measure and stone clearance as an outcome point.^{6,7} This is, to our knowledge, the only published study looking at aspects of ESWL treatment purely from the patient's point of view. The results of this study will enable us to put the appropriate 'weight' on the results of patient satisfaction surveys in order to allocate resources and improve service appropriately.⁸

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References

1. Chaussy C, Brendal W, Schmiedt E. Extracorporeally induced destruction of kidney stones by shock waves. *Lancet* 1980; 2: 1265.
2. Joyner S, Larking A, Boyd PJR, Anson K. High-dose lithotripsy with sedo-analgesia is effective as outpatient procedure. *Urolithiasis* 2000; 736–7.
3. Kassirer JP. Incorporating patients' preferences into medical decisions. *N Engl J Med* 1994; 330: 1895–6.
4. Maroof M, Khan RM, Bhatti TH, Hamalawy H, Siddique MK. Evaluation of patient controlled sedation and analgesia for ESWL. *J Stone Dis* 1993; 5: 240–3.
5. Mahmood N, Turner W, Rowgaski K, Almond D. The patients' perspective of extracorporeal shock-wave lithotripsy. *Int Urol Nephrol* 1998; 30: 671–5.
6. Obek C, Onal B, Kantay K, Kalkan M, Yalcin V, Oner A *et al*. The efficacy of extracorporeal shock wave lithotripsy for isolated lower pole calculi compared with isolated middle and upper caliceal calculi. *J Urol* 2001; 166: 2081–5.
7. Kawano M, Yasumoto R, Tanaka T, Nishisaka N, Naganuma T, Kishimoto T. Extracorporeal shock wave lithotripsy for upper urinary tract stones using the Dornier Lithotripter Compact: an experience in Japan. *Hinyokika Kiyo* 2000; 46: 701–4.
8. Quatan N, Kouriefs C, Boyd P. Do our patients expect too much from extracorporeal shock wave lithotripsy. *Ann R Coll Surg Engl* 2003; 85: 386–8.

APPENDIX 1*What is important to patients undergoing ESWL for renal stone disease?*

1.	Information leaflets prior to treatment											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
2.	Flexibility of appointment time											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
3.	Friendly staff											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
4.	Explanation of procedure and possible complications											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
5.	Prompt start with no delays											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
6.	Efficient staff											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
7.	Be able to see X-rays and discuss progress											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
8.	Sedation during treatment											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
9.	Pain-free treatment											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
10.	Smooth recovery before leaving the department											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
11.	Follow-up appointment confirmed at the end of treatment											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
12.	Take-home medication for pain relief											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
13.	Contact numbers in case of emergencies related to lithotripsy											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
14.	Early return to work/normality											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
15.	Free of stone/stone pain											
	Least important	1	2	3	4	5	6	7	8	9	10	Most important
16.	Comments											