

Validation of a surgical decision aid for patients with nephrolithiasis: Shockwave lithotripsy versus ureteroscopy

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INTRODUCTION AND OBJECTIVE: Shared decision making is recommended for patients with symptomatic nephrolithiasis to assist the deciding between ureteroscopy (URS) or shockwave lithotripsy (SWL). The practice of shared decision making remains low in this population. We aimed to develop a surgical decision aid (SDA) to facilitate treatment decision making for patients with nephrolithiasis.

METHODS: The scope of the SDA was identified through discussions with patients, patient advocates and urologists in the Michigan Urological Surgery Improvement Collaborative (MUSIC). A steering committee consisted of patient advocates, MUSIC coordinating center, decision making content experts, biostatisticians and MUSIC urologists. Content domains were assessed through best available evidence and expert opinion. For content validation we conducted anonymous survey of 35 MUSIC urologists. Content Validity Ratios (CVR), numeric value indicating degree of expert validity, were calculated. Face validation interviews were conducted with patient advocates.

RESULTS: A prototype using descriptive plain language and pictorial information was designed for nephrolithiasis patients who are candidates for SWL or URS. Page 1 addressed patient education and page 2 informed urologists of patient treatment goals. Six content domains were chosen: anesthesia type, effectiveness, number of procedures, risk, pain and recovery. 91.4% and 85.7% of urologists indicated that Page 1 and Page 2 accomplished their goals, respectively (Table 1). Anesthesia type was the only domain to receive a lower than acceptable CVR. Patient advocates reported high levels of face validation (Table 2).

CONCLUSIONS: We developed a SWL vs URS treatment choice SDA with promising content and face validity. Agreement and contradiction between content and face validation regarding relevance of anesthesia type and recovery time indicate further work is required to determine clinical utility and understand its potential ability to improve patient understanding and treatment satisfaction.

Source of Funding: Blue Cross Blue Shield of Michigan

Table 1: Expert panel surgical decision aid content validity survey results

	Yes (n)	I-CVI	CVR
Page 1 accomplishes stated goal	32	.914	-
Page 2 accomplishes stated goal	30	.857	-
Domain relevance			
- Anesthesia	25	.714	0.429
- Effectiveness	32	.914	0.829
- Number	32	.914	0.829
- Risk	33	.943	0.886
- Pain	34	.971	0.943
- Recovery	32	.914	0.829
Scale CVI		.893	

I-CVI – Item Content Validity Index; CVR – Content Validity Ratio

Table 2: Patient advocate surgical decision aid face validity interview responses

	PA 1	PA 2	PA 3	Yes
I understand the advantages of the options given	Yes	Yes	Yes	100 %
I understand the disadvantages of the options given	No	Yes	Yes	67 %
I feel like the aid would help make a more informed decision	Yes	Yes	Yes	100 %
I feel like the aid would help me feel more involved in the decision-making process	Yes	Yes	Yes	100 %
I feel like the aid is presented in a balanced manner	Yes	Yes	Yes	100 %
Domain Relevance				
- Anesthesia	Yes	No	No	33 %
- Effectiveness	Yes	Yes	Yes	100 %
- Number of procedures	Yes	Yes	Yes	100 %
- Risk of complications	Yes	Yes	Yes	100 %
- Pain	Yes	Yes	Yes	100 %
- Recovery time	Yes	No	No	33 %
LikertScale Evaluation (1 – 5)	PA 1	PA 2	PA 3	Mean
- The information is sufficient for the goals of the Decision Aid	4	4	5	4.3
- The information is clearly provided	5	5	5	5
- The decision aid is useful	5	5	5	5
- The decision aid helped improve my knowledge	5	5	5	5
- I would recommend this aid to others	5	5	5	5
- Overall, can you score the decision aid?	4	5	5	4.7

PA – Patient Advocate