

## **COST-EFFECTIVENESS ANALYSIS OF RETREATMENT OF STRESS INCONTINENCE AFTER FAILED SLING WITH EITHER TVT OR PUBOVAGINAL SLING**

### Hypothesis / aims of study

Little comparison data exist examining either effectiveness or cost of autologous pubovaginal sling (PVS) or midurethral sling (e.g. tension-free vaginal tape (TVT)) for the treatment of recurrent urinary stress incontinence (RUSI) after a failed mid urethral sling (MUS). A cost-effectiveness analysis (CEA) was performed comparing PVS and MUS for RUSI after failed MUS.

### Study design, materials and methods

A CEA decision model was developed (with TreeAge Pro software) to compare direct costs (2010 US dollars) and effectiveness (quality-adjusted life years (QALYs)) of PVS and TVT for RUSI over 1 year from the health care system perspective (see Figure). Two treatment strategies were modeled in the decision tree: TVT or PVS. After either surgery, four outcomes are possible: 1) cure; 2) failure and return of SUI followed by an additional PVS with subsequent cure; 3) failure and return of SUI followed by an additional PVS with subsequent failure and RUSI; and 4) persistent, untreated RUSI that did not undergo additional PVS. Variables are represented in the table. Variable estimates and ranges were either calculated or extrapolated from existing literature (see Table). Sensitivity analyses for all variables were performed.

### Results

The average cost effectiveness was \$7,014/QALY for TVT and \$8,530/QALY for PVS. The PVS offered an incremental effectiveness of only 0.002 QALY with an associated incremental cost of \$1391, resulting in an incremental cost-effectiveness ratio (ICER) for PVS as compared to TVT of \$759,948/QALY, which is dramatically higher than the generally accepted threshold of \$50,000/QALY. In 1-way sensitivity analyses, probability of TVT success, probability of 1<sup>st</sup> PVS success, cost of TVT, and cost of PVS had the most impact on ICER. Threshold values resulting in ICER < \$50K and thus preferring PVS are TVT cure < 62%, 1<sup>st</sup> PVS cure > 90%, cost of PVS < \$5200, and cost of TVT > \$6300.

### Interpretation of results

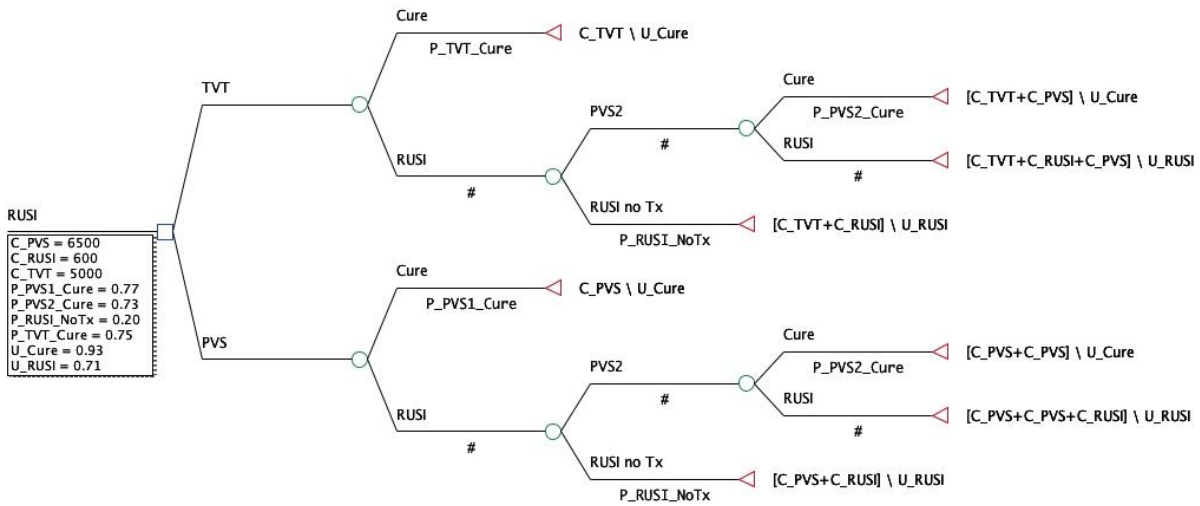
The incremental cost effectiveness of PVS over TVT is dramatically higher than the generally accepted threshold of \$50,000/QALY.

### Concluding message

PVS was not cost-effective compared to TVT for the treatment of RUSI. If the success rates of PVS increased and of TVT decreased, and similarly costs of each procedure, then PVS would be cost effective.

Table. Variable estimates and ranges used in CEA analysis.		
Variable	Point estimate	Range
Utility of Cure	0.93	0.76-0.93
Utility of Incontinence	0.71	0.65-0.78
Probability of TVT Success*	0.75	0.40-0.92
Probability of 1 <sup>st</sup> PVS Success*	0.77	0.50-0.90
Probability of 2 <sup>nd</sup> PVS Success	0.73	0.50-0.90
Probability of No Retreatment	0.20	
Cost of TVT*	\$5000	\$3300-7700
Cost of PVS*	\$6500	\$4000-10000
Cost of UI no treatment	\$600	\$200-1200
*variables with significant effects on sensitivity analyses		

Figure



<b>Specify source of funding or grant</b>	<b>None</b>
<b>Is this a clinical trial?</b>	<b>No</b>
<b>What were the subjects in the study?</b>	<b>NONE</b>