Abstract # 11489

Variations in Surgeon Treatment Preferences for Soft Tissue Sarcoma: Preference-based Utility Values for Margin vs. Function Health States

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Background

First line treatment for lower extremity (LE) soft tissue sarcoma (STS) is surgical resection of the tumor. However, due to variability in surgical treatment patterns, there is continued debate by surgeons on how to best treat this disease. The basis for these differences in surgical treatment preferences among surgeons is not well understood. The rationale for considering the surgeon's perspective by using health-state (HS) preference measurement is two-fold: 1) surgeons have conflicting roles as they must both represent their patient that they took an oath to care for and 2) represent societal preferences for allocating the limited resource of surgical care.

Questions/Purpose

The primary purpose of this study is to quantify surgeons' HS utility preferences for STS health states. This is a hypothesis-generating aim as no data currently exists on surgeon's preferences for LE STS health states. Furthermore, the question remains does a surgeon's preference for a LE STS health state differ from a patient's preference. It is hypothesized that that surgeon' stated HS preferences will favor function-preserving health states over sufficient margin.

Participant Sample and Methods

A convenience sample of STS surgeons attending MSTS AAOS Specialty Day and CTOS annual meeting were surveyed using Qualtrics, an online survey software product. General questions included: demographics, post-graduate training, medical practice variation, surgical treatment strategies, and the clinical epidemiology of post-surgical STS. In addition, an online standard gamble (SG) exercise was presented to elicit utility values for STS-related health states. The utility values for the SG are anchored at 0 = death and 1=full health. For validation purposes with the SG exercise, a rating exercise using a visual analog scale (VAS) for the HS presented in the SG tasks was conducted where 0=worst imaginable HS and 100=best imaginable HS. Data analysis using summaries and descriptive statistics for continuous and categorical variables was conducted using STATA 13.1 (StataCorp, College Station, TX). Power functions as described by Torrance (2001) were used to convert VAS ratings to SG converted means.

Results

Of the 51 surgeons who attempted to enroll, only 22 (43%) completed the survey and of those only 19 (37%) were surgeons and qualified for this analysis. The majority of surgeons (N=9/19, 47%) practiced in a university or medical school setting and (N=6/19, 32%) practiced in a hospital with the remaining surgeons (N=4/19, 21%) divided among other settings. Mean years in practice was 12 years (range: 3 – 25 years) with 32% (N=6/19) seeing on average more than >100 sarcoma cases per year.

On a scale from 0 to 100 with 0 = no local control/high rate of local recurrence and 100=complete local control/low rate of local recurrence, the median minimally acceptable level of local control was 74.7 (SD=38.6, range=3 – 100). For function, where 0=complete loss of function and 100=no loss of function, the median acceptable level of loss of physical function was 50.5 (SD=50.5, range=19 – 100).

The highest utility value (Table 1) by the SG method on a scale from was found in the HS that describes a person having just had an inadequate margin surgery with acceptable function preservation (HS3) (N=11, 0.83 ± 0.149). The HS ranking changed when using the VAS rating scale method, where the highest utility value was for the HS that describes a person who just had an adequate margin surgery with acceptable function preservation (HS1) (N=16, 70.8 ± 14.8). Using the same VAS method, a close second ranking was HS3 (N=18, 70.6 ± 14.3). Table 2 lists the rankings by HS and method.

Conclusions

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Surgeons seem to report higher utility values for HS following surgical treatment of STS than utility values reported in the literature for similar HS valued by the general population. This finding could indicate that surgeons' HS preferences do not match patient HS preferences and thus the STS surgeon, may be substituting their own HS preferences for those of patients. This substitution can lead not only to a conflict between surgeon's surgical intent and patient's desired quality of life, but could also have economic implications for the ratio of the expected value of utility for surgical treatment of STS.

It is suspected there might be confusion by the respondents on the directionality of probability questions for local recurrence and physical function as well as the standard gamble exercise. Sensitivity analysis will be used to understand the affect this may have on the responses. The skewness of the data is also a result of the small sample size. Increasing surgeon participation to achieve a larger sample size is necessary to report more valid results.

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Tables

Table 1. Summary Statistics for SG and VAS

HS	Method	N	Mean	SD	Median	Min	Max
Adequate Margin + Acceptable Function (HS1) (Disease Free State)	SG	14	0.596	0.332	0.700	0.050	0.950
	VAS	16	70.8	14.8	69.5	42	100
Adequate Margin + Adverse Function (HS2) (Disease Free State)	SG	12	0.692	0.259	0.675	0.100	1.000
	VAS	18	50.0	15.7	48.7	13.5	86.8
Inadequate Margin + Acceptable Function (HS3) (Diseased State)	SG	11	0.832	0.149	0.850	0.450	0.950
	VAS	18	70.6	14.3	71.6	29.2	97
Inadequate Margin and Adverse Functional Outcomes (HS4) (Diseased State)	SG	6	0.558	0.267	0.600	0.150	0.800
	VAS	11	45.7	14.6	40.2	33.1	82
Adequate Margin + Adverse Function + Reexcision of Local Recurrence (HS10) (Re-excised and Disease Free)	SG	13	0.450	0.384	0.350	0.000	1.000
	VAS	16	40.1	19.9	39.2	5	73.1
Inadequate Margin and Adverse Functional Outcomes with Local Recurrence and No Reexcision (HS16) (Diseased State)	SG	6	0.367	0.322	0.400	0.000	0.750
	VAS	9	24.2	12.9	24.4	5.7	40.5

*SD – standard deviation

Table 2. Health State Ranks by Direct Elicitation Methods (SG, VAS) and Conversion of VAS to SG utility weights

HS	Rank by SG (Mean)	Rank by VAS (Mean)
Adequate Margin + Acceptable Function (HS1)	3	1
Adequate Margin + Adverse Function (HS2)	2	3
Inadequate Margin + Acceptable Function (HS3)	1	2
Inadequate Margin and Adverse Functional Outcomes (HS4)	4	4
Adequate Margin + Adverse Function + Reexcision of Local Recurrence (HS10)	5	5
Inadequate Margin and Adverse Functional Outcomes with Local Recurrence and No Reexcision (HS16)	6	6