Variance Between Experts and Community Practitioners in Treating Soft Tissue Sarcomas: Analysis of an Online Decision Support Tool

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Background

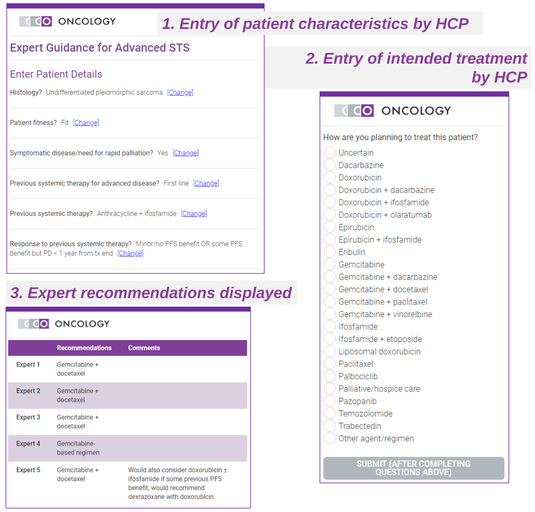
Soft tissue sarcomas (STSs) are rare cancers comprising > 50 histologic subtypes, each of which has unique management considerations. Current clinical practice guidelines note numerous targeted and chemotherapy options for patients with advanced STSs but generally lack specificity in providing recommendations for individual STS subtypes. As such, it is recommended that patients with STSs be treated at high-volume centers; however, this is not always possible.

We developed an online treatment decision support tool designed to provide oncology healthcare providers (HCPs) with case-specific systemic treatment recommendations from 5 STS experts. Here, we report an analysis of cases entered into the tool by HCPs, comparing their planned treatment with expert recommendations and assessing the impact of those recommendations on intended HCP treatment decisions.

Tool Design and Analysis

- 5 experts provided treatment recommendations in February 2019 for 272 distinct case scenarios of patients with unresectable or metastatic STS
  - Case scenarios were defined by factors the expert panel considered important for treatment selection, including histologic STS subtype, patient fitness, and previous treatment
  - Experts: Vicki L. Keedy, MD; Shreyaskumar R. Patel, MD; Richard F. Riedel, MD; Brian A. Van Tine, MD, PhD; William Tap, MD
  - 7 of the most common chemotherapy-sensitive histologic STS subtypes were selected for the tool (see Table)
- To use the tool, HCPs enter their patients' information and their intended treatment plan; expert recommendations for their specific patient scenario are then provided
- Tool available at **clinicaloptions.com/SarcomaTool**
- This analysis compared the intended treatment of HCPs with expert recommendations for specific cases entered in the tool from April 10, 2019 to May 20, 2020

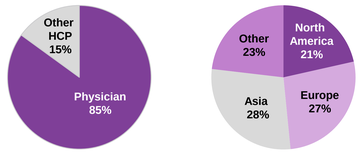
Tool Use and Screenshot Examples



Results

Tool Participant Demographics

- 605 patient cases entered by 349 HCPs



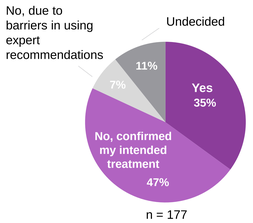
- Of 166 responding treaters, 61% reported treating ≤ 10 patients with STS per year

Characteristics of Patient Cases Entered by HCPs

Case Characteristic, n (%)	N = 605
Histology	
▪ Leiomyosarcoma	213 (35)
▪ Undifferentiated pleiomorphic sarcoma	89 (14)
▪ Synovial sarcoma	77 (13)
▪ Dedifferentiated liposarcoma	74 (12)
▪ Angiosarcoma	61(10)
▪ Myxoid/round cell liposarcoma	49 (8)
▪ Malignant peripheral nerve sheath tumor	42 (7)
Patient fitness	
▪ Fit	545 (90)
▪ Unfit	60 (10)
Symptomatic disease	
▪ Yes	339 (56)
▪ No	266 (44)
Previous systemic therapy	
▪ None	407 (67)
▪ First line	198 (33)
Extent of disease (n = 407 with no previous systemic therapy)	
▪ Locally advanced unresectable with potential for conversion to resectable disease	201 (49)
▪ Metastatic or locally advanced unresectable with no potential for conversion to resectable disease	206 (51)

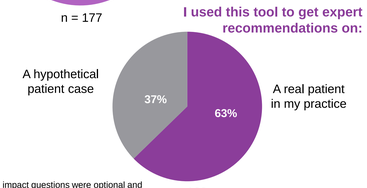
Use of the Tool and Impact on Treatment Plan

Did the expert recommendations change your treatment choice?



n = 177

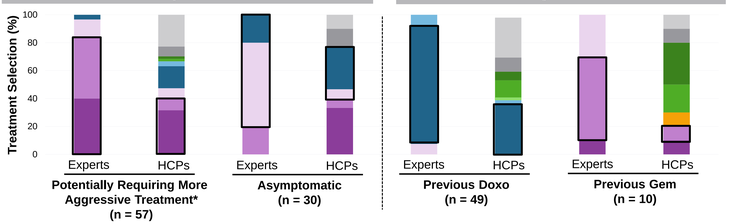
I used this tool to get expert recommendations on:



n = 169

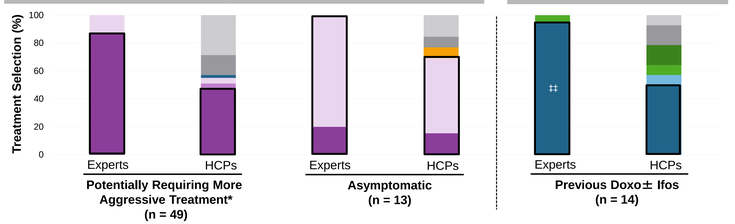
Intended use and tool impact questions were optional and available after users received expert recommendations.

Leiomyosarcoma



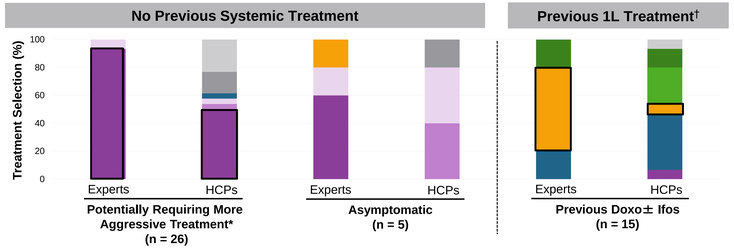
Key observations: For previously untreated pts, HCPs less frequently planned more aggressive tx for pts who might benefit vs experts; conversely, HCPs more frequently planned more aggressive tx for pts with asymptomatic disease vs experts. Substantial tx variability was observed between HCPs and experts in the 2L setting, with HCPs more likely to plan tx with novel agents like trabectedin.

Undifferentiated Pleiomorphic Sarcoma



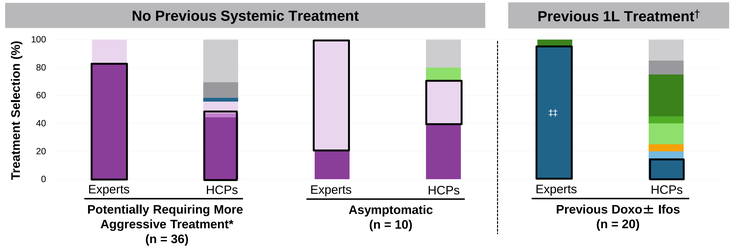
Key observations: For previously untreated pts, HCPs less frequently planned more aggressive tx for pts who might benefit vs experts; HCP plans and expert recommendations more closely aligned for pts with asymptomatic disease. For pts who did not respond to doxo ± ifos, experts almost exclusively recommended gem + doc; the planned tx of HCPs was more variable.

Synovial Sarcoma



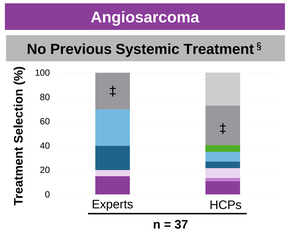
Key observations: For previously untreated pts, HCPs less frequently planned more aggressive tx for pts who might benefit vs experts; for asymptomatic pts, there was variability between experts in optimal tx recommendations. Notably, experts most frequently recommended ifos (most often in a high-dose regimen) following doxo ± ifos; this regimen was infrequently planned by HCPs.

Dedifferentiated Liposarcoma

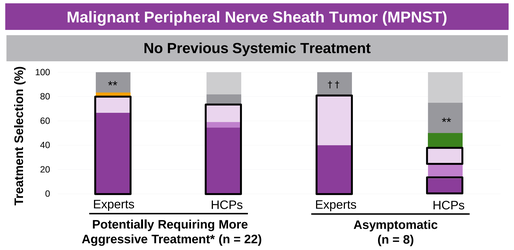


Key observations: For previously untreated pts, HCPs less frequently planned more aggressive tx for pts who might benefit vs experts; conversely, HCPs more frequently planned more aggressive tx for pts with asymptomatic disease vs experts. Following doxo ± ifos, experts almost exclusively recommended gem + doc; HCPs most often planned tx with a novel agent like trabectedin or eribulin.

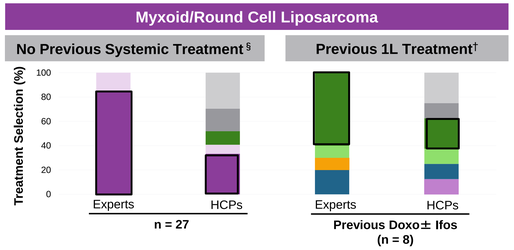
Angiosarcoma



Malignant Peripheral Nerve Sheath Tumor (MPNST)



Myxoid/Round Cell Liposarcoma



Key observations: For 1L tx for angiosarcoma, expert recommendations varied considerably. Expert and HCP tx selections generally aligned for 1L MPNST cases where more aggressive treatment would potentially be required. For myxoid/round cell liposarcoma cases with previous doxo ± ifos, experts most frequently recommended a novel agent like trabectedin.

Analyzed cases in which pts had no significant comorbidities and ECOG performance status was 0/1. *Symptomatic disease/need for rapid palliation or locally advanced unresectable disease with potential for conversion to resectable disease. †Case scenarios for which no/minor PFS response was observed with previous tx. ‡Experts, 30% paclitaxel; HCPs, 25% paclitaxel, 8% other. §Expert tx differences largely unaffected by symptomatic vs asymptomatic disease. **20% epirubicin ± ifos. ††17% epirubicin + ifos. ‡‡n = 4 expert choices defined as "gem-based tx." *1L, first-line treatment; 2L, second-line treatment; dac, dacarbazine; doc, docetaxel; dox, doxorubicin; gem, gemcitabine; ifos, ifosfamide; pts, patients; tx, treatment.*

Conclusions

- Analysis of data from an online treatment decision support tool suggested differences in how experts and community providers manage patients with advanced STS of varied histologic subtypes
- Cases of leiomyosarcoma or liposarcoma were most frequently entered into the tool; however, a significant number of cases were entered for relatively rarer subtypes, including synovial sarcoma and angiosarcoma
- Expert recommendations in the tool changed the intended treatment plan of many HCPs, suggesting that online treatment decision tools that provide customized, patient-specific expert advice may increase implementation of optimal therapeutic decisions for advanced STS

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