Adult Soft Tissue Sarcoma

Cancer Centre of Southeastern Ontario
Standard Management Guidelines

Intended for use by Clinicians and Health Care Providers involved in the Management or Referral of adult patients with Soft Tissue Sarcoma – NOTE – does not include Gastrointestinal Stromal Tumours (GIST)

Section	Activity	Activity Description	Details	Reference(s)
AA	Cancer Centre Referrals		• CCSEO partners with London and Toronto to manage this complex rare malignancy with regular Multidisciplinary case conferences and, if needed, referrals • All patients with a confirmed or suspected diagnosis of bone or soft tissue sarcoma should be referred to the sarcoma multidisciplinary team (MDT). [contact info] • Suspect Sarcoma and refer if Patients has soft tissue mass, which has the following 2 features: o Deep to or fixed to deep fascia o Diameter of 4 cms or more. o Other features, which may also indicate malignancy, include: ▪ Rapid increase in size ▪ Pain • The tumour should NOT be biopsied before referral.	
A	Diagnosis		• Diagnostic imaging MUST be performed prior to a biopsy (see below: "Investigations") • Diagnostic biopsies should be performed or supervised by the Sarcoma Team surgeon o Open incisional or needle technique. o Endoscopic or needle biopsy may be indicated for deep, thoracic, abdominal or pelvic sarcomas. • Biopsy specimens should be examined by an experienced	

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			Sarcoma pathologist. Final pre-operative tissue diagnosis should be after MCC discussion	
B	History and Physical exam		• Complete history and physical examination • Family history of sarcoma and other malignancies • History of prior radiation	
C	Investigations	Imaging	• MRI is modality of choice: Indicated for all suspected soft tissue sarcoma (possible exception: small superficial lesions) • IV contrast may be helpful: o Differentiating viable and necrotic tumour o Planning biopsy sites • Ultrasound may be useful as well	
D	Primary Management	Surgery	Surgery • Surgery must be performed by surgeons trained in sarcoma management. Aim is clear margins • Limb conservation is the goal for extremity sarcoma Pre-operative treatment o Radiotherapy and or Chemotherapy, may be indicated preoperatively (to be determined by MCC review) • Additional Surgical expertise: o Reconstructive surgeons: Consult prior to definitive surgery. Appropriate reconstructive techniques can improve the quality of limb conservation surgery without interfering	

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significantly with adjuvant therapy.
- Other surgical specialties may be needed in selective cases e.g. for vascular reconstruction

Resection Margins
- Surgical margins should be documented by both the surgeon and the pathologist.
- Margins less than 1.0 cm should be evaluated for postoperative adjuvant therapy
- Close or positive margins to be identified intra-operatively by the surgeon.
  - R0 resection - No residual microscopic disease
  - R1 resection - Microscopic residual disease
  - R2 resection - Gross residual disease

Amputation is sometimes an option:
- Patient preference
- Or if one or more of the following tumor characteristics occur:
  - Extensive soft tissue mass and/or skin involvement
  - Involvement of a major artery or nerve
  - Extensive bony involvement necessitating whole bone resection
  - Failure of preoperative chemotherapy or radiation therapy
  - Tumor recurrence after prior adjuvant

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			radiation	
E	Pathology of Diagnostic Specimen		• Pathologic assessment of biopsies and resected specimens to be done by experienced sarcoma pathologist who will conduct specialized stains, apply Grade and conduct, when relevant tumour cytogenetic and molecular assays • Certain tumours are characterised by specific defects e.g. o Ewing's sarcoma t(11;22)(q24;q11.2-12) o Synovial sarcoma t(X;18)(p11.2;q11.2) o Myxoid liposarcoma (TLS-CHOP protein)	
F	Staging		• Staging to exclude metastases: o CT chest: high sensitivity for pulmonary and hepatic metastases. • Use 7th edition TNM UICC & AJCC	National Comprehensive Cancer Network Staging Guidelines (1)
G	Primary management	Radiation Therapy (Curative Intent)	Radiation Therapy should be prescribed by a member of the Sarcoma Clinical Team. In general, pre-Operative or Neo-Adjuvant Radiotherapy is preferred to post- op radiation *Indications for Radiation* • Size >5cm • Concern regarding adequate resectability (anatomy) • Facilitate limb salvage • Resection margins <1cm	

Section	Activity	Activity Description	Details	Reference(s)
			• Field contamination by prior surgery • Deep tumors • Grade probably not indication Radiation plan is based on whether pre- or post-operative and whether margins are involved. The following are general guides: • Neoadjuvant (pre-operative) radiation: 50Gy/25 fractions • Post-operative radiation: 60-66Gy/30-33 fractions • Boost: as indicated for close or positive margins. HDR brachytherapy can also be considered. (For more detail refer to Radiation Therapy SOPs)	
H	Primary Management (Curative Intent)	Chemotherapy	**Neo-adjuvant and Adjuvant Chemotherapy** • Is recommended for small round blue cell subtypes of soft tissue sarcoma (e.g. Rhabodomyosarcoma, PNET/Ewing's) • Treatment is individualized based on prognostic factors • The regimen most often used in the adult setting is IE-VAC alternating • For other types of soft tissue sarcoma neo-adjuvant and/or adjuvant chemotherapy is not routinely recommended (see **Controversies**) •	Cancer Care Ontario Adjuvant/ Curative/ Neo-Adjuvant Intent Systemic Therapy (2)

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I	Follow up with no evidence of disease		• All patients should be followed up in a Multidisciplinary manner. • Some patients may require regular radiological assessment. • Individual follow-up protocols should be arranged for each patient. It is inappropriate to make rigid recommendations regarding the follow-up protocol, due to the heterogeneous behaviour of this group of tumours. • There are no significant data to support particular follow up protocols. • No randomized trials of follow up technique exist in sarcoma Time after treatment appointments — Frequency of follow up Years 1-2 — 3 monthly Years 3-5 — 6 monthly Years 6-10 — annually After Year 10 — Discharge if appropriate	
J	Recurrent and Advanced/Incurable Disease	Potentially curative intent	Early detection of limited metastatic disease (e.g. pulmonary) or local recurrence is important since resection of limited metastatic disease or local recurrence can lead to long term survival**. All cases of recurrence should be**	

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			evaluated for potential curative intent resection.	
		Palliative Intent	Treatment individualized based on age/organ function/performance status/ histology /goals of therapy **Palliative Radiotherapy** • May be appropriate for patients with advanced soft tissue malignancy. **Palliative Chemotherapy** • For most types of soft tissue sarcoma single agent sequential therapy recommended for patients well enough to receive such therapy. • Usual first line regimen DOXO	Cancer Care Ontario Palliative Intent Systemic Therapy (3)
K	Controversies		***Adjuvant Chemotherapy*** is controversial: The results for clinical trials studying adjuvant chemotherapy therapy have yielded inconsistent results with no clear overall survival benefit observed (4). A recently published relatively large and well conducted clinical trial did not confirm an improvement in either overall or relapse-free survival (5). There is insufficient data available to identify subgroups of patients that may benefit from adjuvant chemotherapy. The results of further trials and an update meta-analysis are awaited.	(4) (5)
L	Clinical Trials		All patients should be offered the option of participating in active clinical trials that are applicable to their clinical situation if eligible	Cancer Centre of Southeastern Ontario. Oncology Clinical Trials (6)

Works Cited

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2. **Cancer Care Ontario (CCO) Systemic Treatment Program.** Adjuvant/ Curative/ Neo-Adjuvant Soft Tissue Cancer Regimens. *Systemic Treatment Funding Model.* [Online] February 2015. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=300426.

3. **Cancer Care Ontario (CCO) Systemic Treatment Program (Palliative).** Palliative Soft Tissue Cancer Regimens. *Systemic Treatment Funding Model.* [Online] February 2015. https://www.cancercare.on.ca/common/pages/UserFile.aspx?fileId=313720.

4. **Cochrane Database Syst Rev**. 2000;(2):CD001419 PMID: 10796873

5. **Woll PJ, Reichardt P, Le Cesne A, et al.** Adjuvant chemotherapy with doxorubicin, ifosfamide, and lenograstim for resected soft-tissue sarcoma (EORTC 62931): a multicentre randomised controlled trial. *Lancet Oncol*. 2012;13:1045-1054.

6. **Cancer Centre of Southeastern Ontario.** Oncology Clinical Trials. *Cancer Centre of Southeastern Ontario at the Kingston General Hospital.* [Online] http://www.kgh.on.ca/en/research/groupsanddepartments/researchgroups/Pages/clinicaltrials.aspx

Revisions

- 2013/07/18: Sarcoma soft tissue sarcoma guideline PPT developed by Disease Site Group
- 2014/08/15: Draft created in CCSEO Standard Management Guidelines template
- 2015/04/08: Systemic treatment regimen detail added
- 2015/05/20: Presented and discussed for approval at the Disease Site Group Chairs Council (2015/05/20)
- 2015/08/14: Final revisions reviewed by Chairs