AO Spine Knowledge Forum Tumor

The AO Spine Knowledge Forum Tumor is an international consortium of spinal oncology surgeons and oncologists dedicated to advancing care for patients with spinal tumors. They focus on both metastatic and rare primary spine tumors, implementing physician-driven clinical studies and publishing peer-reviewed research to enhance patient outcomes.

Ongoing Research Projects:

METASTRA Horizon Europe Collaboration Grant: Aims to improve fracture prevention in patients with vertebral metastases by developing computational models to assess fracture risk.

RELIEVE Study: Investigates the effectiveness of surgery and radiotherapy in alleviating pain for patients with vertebral metastasis.

AO Spine Cancer-related Pain Classification: Develops a classification system to guide assessment and treatment decisions for spine cancer-related pain.

Metastatic Tumor Research and Outcomes Network (MTRON): Establishes a network of spine oncology centers to conduct prospective research on metastatic spine tumors.

Primary Tumor Research and Outcomes Network (PTRON): Creates a network dedicated to researching primary spinal column and cord tumors.

These projects aim to enhance understanding and treatment of spinal tumors, ultimately improving patient care.

Steering Committee:

Chairperson: Ilya Laufer, NYU Grossman School of Medicine, New York, USA

Past Chairpersons: Arjun Sahgal, Sunnybrook Health Sciences Center, Toronto, Canada; Laurence Rhines, MD Anderson Cancer Center, Houston, USA

Members: Nicolas Dea, University of British Columbia, Canada; Alessandro Gasbarrini, IRCCS Istituto Ortopedico Rizzoli, Italy; Jeremy Reynolds, Nuffield Orthopaedic Centre, UK; Jorrit-Jan Verlaan, UMC Utrecht, Netherlands; Cordula Netzer, Universitätsspital Basel, Switzerland; Ori Barzilai, Memorial Sloan-Kettering Cancer Center, USA

The Epidemiology, Process, and Outcomes of Spine Oncology (EPOSO) is a comprehensive, prospective, multi-institutional, and international observational study initiated by the AO Spine Knowledge Forum Tumor. Its primary aim is to collect detailed data on patient demographics, diagnostic procedures, treatment variables, and both clinical and patient-reported outcomes for individuals undergoing surgical and/or radiotherapeutic interventions for spinal metastases.

A review summarized all studies from the EPOSO network, divided into the following five sections: (1) quality of life and satisfaction, (2) overall survival, (3) spinal instability, (4) neurologic outcome in

patients with metastatic epidural spinal cord compression or radicular pain, and (5) patient and tumor-specific factors. Several important findings were elucidated. Patient evaluation should include SINS, nutritional status, severity and duration of neurologic deficit, extent of metastatic tumor burden, and differentiation of axial from radicular pain. Moreover, SOSGOQ2.0 serves as a useful and validated instrument for patient-reported outcome instrument. Despite the palliative nature of metastatic spine surgery, clear improvement in quality-of-life is seen. Even in patients with short-survival, the remaining weeks and months of life result in improved quality-of-life. Metastatic spine surgery often improves neurologic function, potentially enhancing survival through increased performance status.ConclusionsSeveral noteworthy results have come from the EPOSO network, highlighting important trends in metastatic spine care. The AO Spine Knowledge Forum Tumor has helped advancing metastatic spine tumor research as well as ensure these new findings reach and benefit clinicians and their patients.

Key Findings from EPOSO:

Patient-Reported and Clinical Outcomes: A study published in Neurosurgery in November 2024 evaluated 280 patients with symptomatic spinal metastases who underwent surgical treatment. The findings demonstrated significant and sustained improvements in health-related quality of life (HRQOL) across multiple domains over a two-year follow-up period.

Treatment of Cervical Spine Metastases: An analysis within the EPOSO cohort compared outcomes between patients receiving surgical intervention (with or without radiotherapy) and those receiving radiotherapy alone for cervical spine metastases. Surgically treated patients, who initially presented with higher instability and worse HRQOL scores, showed significant improvements in pain and HRQOL post-treatment. In contrast, patients treated solely with radiotherapy exhibited limited or no improvements.

EPOSO's ongoing research continues to provide valuable insights into the management of spinal metastases, aiming to enhance patient outcomes through evidence-based practices.