From the journals: sarcoma around the world

EWING SARCOMA IN NEPAL: Investigators reported what they believe to be the first prospective clinical trial providing state-of-the-art chemotherapy to patients with Ewing sarcoma in Nepal. They treated 20 newly diagnosed patients with combination chemotherapy, including a course of etoposide and ifosfamide during external-beam radiotherapy. Radiotherapy was the only available treatment modality for local tumor control because advanced tumor-orthopedic services are not available in Nepal.

The 11 females and 9 males enrolled ranged in age from 6 to 37 years.

The treatment protocol—based on the Nepali-Norwegian Ewing Sarcoma Study treatment initiative— consisted of:

- Cyclophosphamide (1,200 mg/m^2 as a 30-minute intravenous [IV] infusion)
- Doxorubicin (40 mg/m^2/d as a 4-hour IV infusion on days 1 and 2; total dose, 80 mg/m^2 in 2 days; total cumulative dose, 400 mg/m^2)
- Etoposide (150 mg/m^2/d as a 2-hour IV infusion; total dose, 450 mg/m^2 in 3 days)
- Ifosfamide (3,000 mg/m^2 over 21 to 24 hours as a 3-day continuous IV infusion; total dose, 9,000 mg/m^2 in 3 days)
- Vincristine (1.5 mg/m^2 IV push; maximum, 2 mg)

Patients received 5 courses of chemotherapy, then radiotherapy twice daily for 4 weeks for a total accumulated 54-Gy dose with a course of etoposide and ifosfamide, followed by 6 additional courses of chemotherapy.

Patients had primary tumors in the following sites: femur (n = 4), pubic bone (n = 1), fibula (n = 1), thoracic wall or costae (n = 4), clavicle (n = 1), craniofacial bone (n = 3), humerus (n = 3), forearm (n = 1), musculus sartorius with invasion into adjacent femur (n = 1), and uterine cervix (n = 1).

Eleven patients completed the entire treatment regimen, 6 of whom had no evidence of disease at a median follow-up of 2.3 years (range, 1.3 to 3.1 years). Four of them died of metastatic disease, and 1 experienced a recurrence 6 months later.

Three patients died due to chemotherapy-related toxicity, and 6 patients did not complete the treatment protocol, 4 of whom experienced progressive disease, were lost to follow-up, and presumed dead.

The investigators concluded that radiotherapy as the sole local treatment modality in combination with chemotherapy is feasible. They observed no fractures among the 15 patients who received radiotherapy.

SOURCE: Jha AK, Neupane P, Pradhan M, et al. Ewing sarcoma in Nepal treated with combined chemotherapy and definitive radiotherapy. *J Glob Oncol*. 2019;5:1-10.

PEDIATRIC SOFT TISSUE AND BONE SARCOMAS IN TANZANIA: In this retrospective review, investigators documented the epidemiologic and clinical features of pediatric sarcomas in the largest pediatric oncology center in Tanzania—Muhimbili National Hospital. Their objective in collecting the data was to compare the results with those of other countries and ultimately prioritize

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RADIOTHERAPY WAS THE ONLY AVAILABLE TREATMENT MODALITY FOR LOCAL TUMOR CONTROL BECAUSE ADVANCED TUMOR-ORTHOPEDIC SERVICES ARE NOT AVAILABLE IN NEPAL.

› AN IMPORTANT DISPARITY BETWEEN TANZANIA AND OTHER COUNTRIES IS THAT MOST PATIENTS IN TANZANIA PRESENT WITH ADVANCED-STAGE DISEASE, WHEN THE POSSIBILITY OF CURATIVE THERAPY IS VASTLY REDUCED.

treatment protocols and resources for the more common pediatric sarcomas in Tanzania. Prior to this study, no data existed on the frequency and types most commonly seen in the country.

Between 2011 and 2016, the investigators collected information on 135 pediatric cases seen at the hospital. Eighty-nine cases (66%) were soft tissue sarcomas (STS) and 46 (34%) were bone sarcomas. Most patients, they reported, presented with a painless swelling.

Investigators found that, as in other countries, embryonal rhabdomyosarcoma accounted for the majority (75%) of all sarcomas seen in this study and osteosarcoma accounted for most (87%) bone sarcomas. However, unlike pediatric sarcomas in other countries, few cases of Ewing sarcoma were diagnosed during the study period.

An important disparity between Tanzania and other countries is that most patients in Tanzania present with advanced-stage disease, when the possibility of curative therapy is vastly reduced. Investigators found the lung to be the most common site of distant metastasis.

Other clinical and tumor characteristics reported in this study included:

- Slight female predominance (51%)
- Mean age, 6.3 years
- 42% of STS patients were younger than 5 years (n = 37)
- 46% of bone sarcoma patients were 10 to 15 years old (n = 21)
- Head and neck were the most common sites for STS
- Extremities were the most common sites for bone sarcomas
- Most patients presented with large tumors (>5 cm for STS and >8 cm for bone sarcomas).

The investigators believe these findings and others they reported will help them adapt treatment protocols used in Europe and America so that they will be most appropriate for their patients.

SOURCE: Siwillis EM, Dharse NJ, Scanlan T, et al. Pediatric soft tissue and bone sarcomas in Tanzania: Epidemiology and clinical features. *J Glob Oncol*. 2019;5:1-6.

PEDIATRIC OSTEOSARCOMA IN LEBANON: Investigators at a single institution in Lebanon reported a similar survival rate for newly diagnosed patients with pediatric osteosarcoma treated at their center as for those treated in more developed countries. In a retrospective review of the medical records of 38 patients treated at the American University of Beirut Medical Center between August 2001 and May 2012, they determined the 5-year overall survival (OS) for all patients to be 74% and the event-free survival (EFS), 62%. Patients with localized disease had a 5-year OS of 81% and an EFS of 68%. Patients with metastatic disease had OS and EFS rates of about 42%.

All patients with localized disease received chemotherapy according to the Pediatric Oncology Group 9351 protocol, which consisted of cisplatin, doxorubicin, and methotrexate. If patients had metastatic disease or tumor necrosis less than 90%, they also received ifosfamide and etoposide.

Patients were a mean age of 12.9 years at diagnosis and there were an equal number of male and female patients. Most patients (n=34) had a primary tumor site affecting the long bones around the knee.

Six patients had metastatic disease to the lungs, and 3 patients had multifocal bone disease with lung metastases.

Thirty-three patients (86.8%) underwent surgical resection after 2 courses of induction chemotherapy. Twenty-two (66.7%) of these patients had a delay in local tumor control of more than 4 weeks. And 12 patients (31.5%) had tumor necrosis of less than 90%.

The investigators analyzed the prognostic importance of age, sex, metastatic disease, tumor site, delay in local control, and degree of tumor necrosis. Bivariate analysis revealed that only the degree of tumor necrosis was a statistically significant adverse prognostic factor for EFS (P=.001) and OS (P=.002).

SOURCE: Abou Ali B, Salman M, Ghanem KM, et al. Clinical prognostic factors and outcome in pediatric osteosarcoma: Effect of delay in local control and degree of necrosis in a multidisciplinary setting in Lebanon. *J Glob Oncol*. 2019;5:1-8.