MUSCULOSKELETAL TUMOR PROFILE IN SAIFUL ANWAR GENERAL HOSPITAL MALANG FROM JANUARY 2011-DECEMBER 2017

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Abstract: Primary tumours of musculoskeletal tissues are relatively uncommomn, they represent only 1% of all malignancies in all ages groups, but the incidence is arising each year. *Many medical research and experiments were developed to found appropriate methods of treatment for tumor patients. Mortality rates of malignant musculoskeletal tumor patients still higher than benign cases. The aim of this study was to describe the incidence, age and sex distribution, location and histology of benign and malignant musculoskeletal tumors diagnosed and/or treated at a tertiary referral Orthopaedic Department serving the East Java. This was a retrospective analysis of prospectively collected data of medical records of all patients diagnosed and/or treated for any type of musculoskeletal tumor at Orthopaedic and Traumatology Department of Saiful Anwar Hospital, in the period from January 2011 to December 2017. This study resulted there were 531 cases of musculoskeletal tumor, within the characteristic: the peak of incidence occurs in the patient older than 60; the highest case was Osteosarcoma (92 cases); and breast metastases (40 cases) distributed highest mortality rates for metastastic bone tumor patients. Result of this study was people at age 60 and older have higher risk for Muskulokeletal Tumor, and Osteosarcoma was the most frequent case.*

Keywords: *Musculoskeletal tumor, data based system, incidence, East Java*

INTRODUCTION

Primary tumours of musculoskeletal tissues are relatively uncommon, they represent only 1% of all malignancies in all ages groups. They are most often seen in children and adolescents, and almost all the patient come with chief complain pain or lump at his/her body. Comprise 3–5% of all tumors diagnosed in European children younger than 15 years, and 7–8% in adolescents from 15 to 19 years of age.[1] Musculoskeletal tumors pose a serious public health problem inthe modern world. Mortality rates of malignant musculoskeletal tumor patients still high.Estimates from the Globocan project show that in the year 2008 there were approximately 12.7 million newcancer cases, and 7.6 million deaths related to cancer in the World.[2] Geographic distribution of these tumors varies greatly around the world. Countries like India, China and Japan have a very low incidence of musculoskeletal tumors, while the highest incidenceis reported in Western Europe and the USA, mainly osteosarcomaand Ewing sarcoma.[3] It is very important to raise global awareness of the growing burden of cancer, and improve medical research and experiments to found appropriate methods of treatment for tumor patients.

Malang is a small city (142,28 km^2) in East Java province of Indonesia, and by mid 2018 it is home to 915.707 residents with a population growth rate of 1,58% per year. Exact information on epidemiology of musculoskeletal tumors in Indonesia are scarce. The aim of this study was to describe the incidence, age and sex distribution, location and histology of benign and malignant musculoskeletal tumors diagnosed and/or treated at a tertiary referral Orthopaedic Department serving the East Java.

RESEARCH METHODS

This was a retrospective analysis of prospectively collected data of medical records of all patients diagnosed and/or treated for any type of musculoskeletal tumor at Orthopaedic and Traumatology Department of Saiful Anwar Hospital, in the period from January 2011 to December 2017. Orthopaedic and Traumatology Department of Saiful Anwar Hospital as one of the health center in East Java collected musculoskeletal patients for the past 7 years with Database system. The certain diagnosis is confirmed by histopathological examination and final decision is taken during the Clinico Pathological Conference between Orthopaedics, Pathologist, and Radiologist. Patients who had a biopsy, or had a tissue sample acquired, all histology findings are included in the records. All patients with confirmed diagnosis of a musculoskeletal tumor, the data was used for this study.

The data include both patient and tumor (name, gender, age, tumor localization, and tumor histology). Descriptive statistics were carried out to calculate thefrequency and percentages of the aforementioned variables. In this study we didn't count the number of patient underwent chemotherapy, it will be explain in the next observational study

RESULTS AND DISCUSSION

During the last 7 years, we managed 531 patients. Bone tumors had higher cases (72%) than soft tissue tumor.

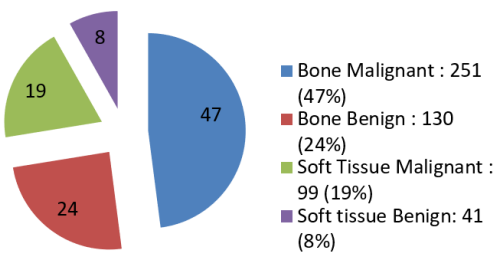

Figure 1. Total Cases

From all patients with bone malignancy, 318 were primary bone tumors and 121 were metastatic from the other malignancy (Figure 2), in which the majority of primary bone tumor was malignant (Figure 3).

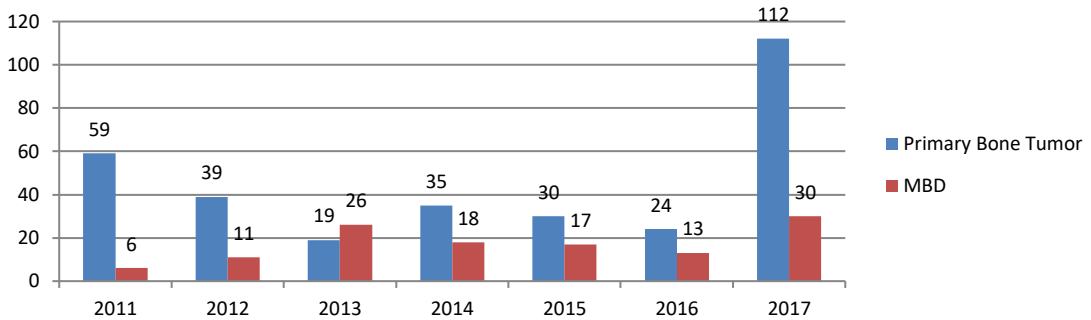

Figure 2**.** Tumor Origin

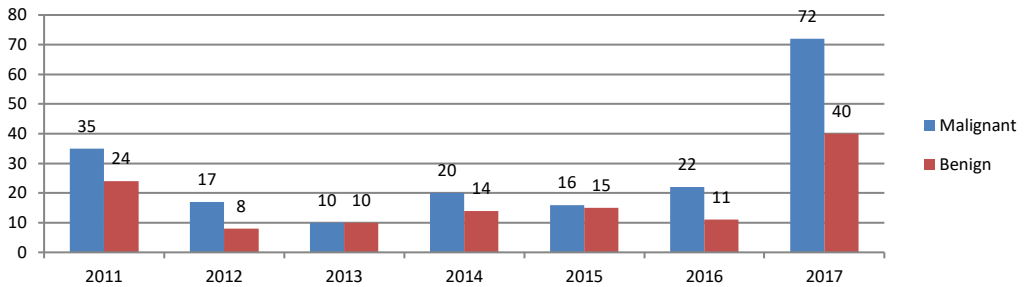

Figure 3**.** Primary Bone Tumor

Regarding localization of the musculoskeletal tumors, the long bones of the lower extremity (femur and tibia) held primacy over all other localizations (Figure 4); and In regard todiagnosis, metastatic bone dissease was the most commonly seen musculoskeletal tumorwith 29,6% incidence, followed by osteosarcoma (24,8%), GCT (9,7%), osteochondroma (7,8%), multiple myeloma (5,4%), chondrosarcoma (4,6%), and liposarcoma (4%) (Figure 5).

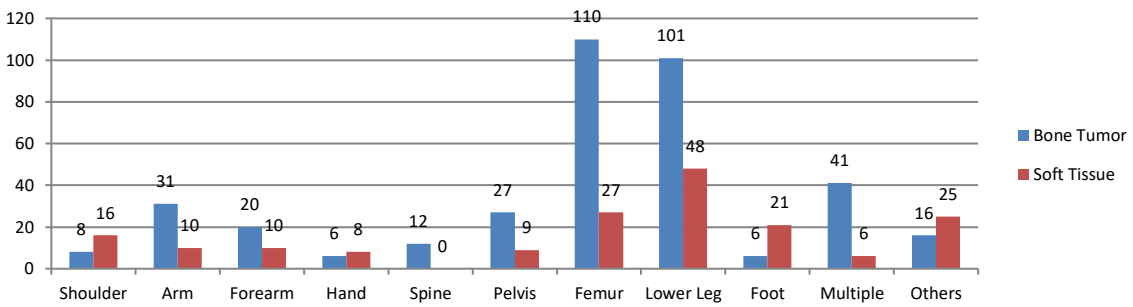

Figure 4**.** Tumor Sites

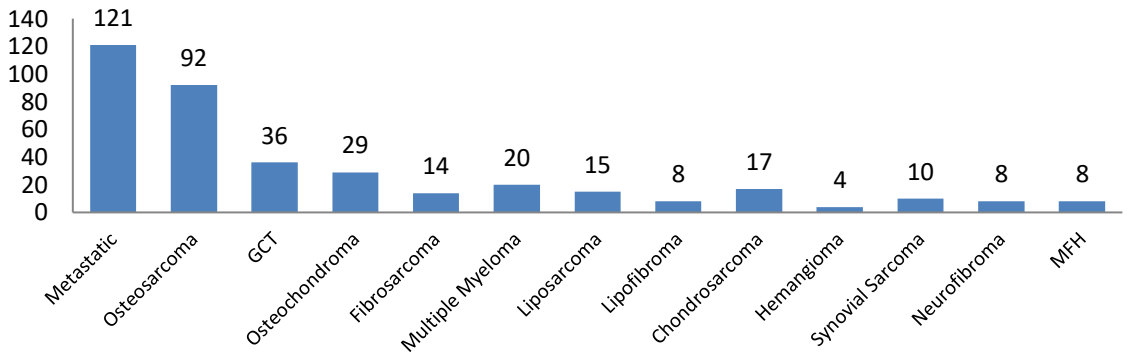

Figure 5. Tumor Types

Breast (40 cases) and lung (36 cases) metastases distributed higher mortality rates for metastastic bone tumor patients (Figure 6 and Figure 7).

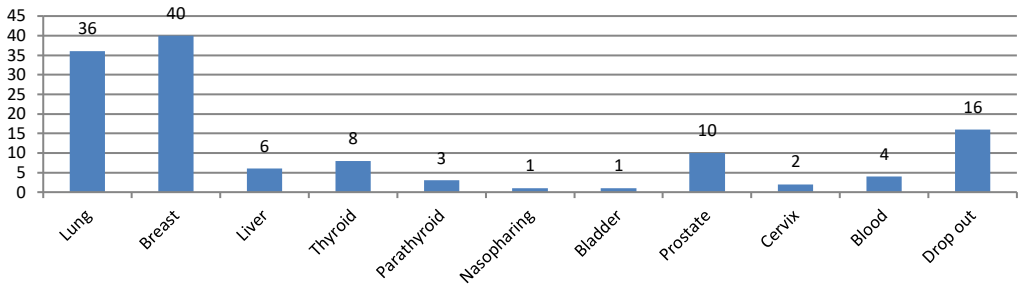

Figure 6. Metastases Origin

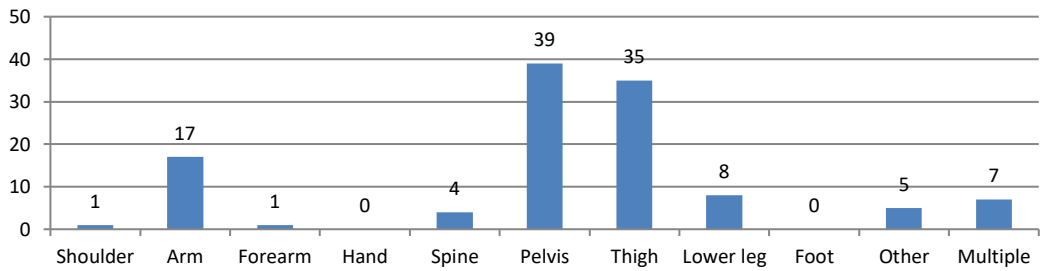

Figure 7. Metastases Sites

From all metastases patients that we treat, 12% (13 patients) still alive until Desember 2017, 37% (42 patients) were passed away, and unfortunately 51% (58 patients) were loss of contact.

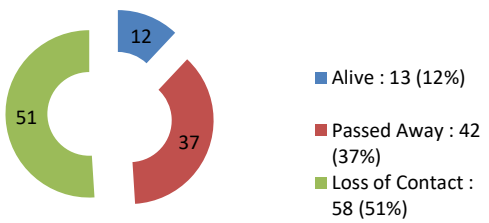

Figure 8. Metastases Follow Up

Osteosarcoma is the most frequent malignant primary bone tumor found. According to the age distribution of osteosarcoma, people aged less than 25 years were most often affected (Figure 9); and according to the localization, the bones of the lower leg (tibia and fibula) and femur were most often affected (Figure 10).

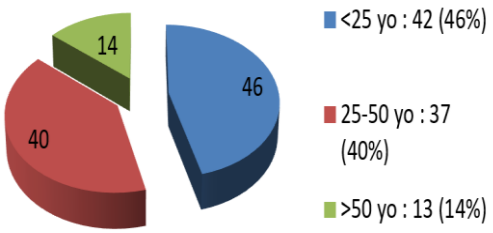

Figure 9. Osteosarcoma Age Distribution

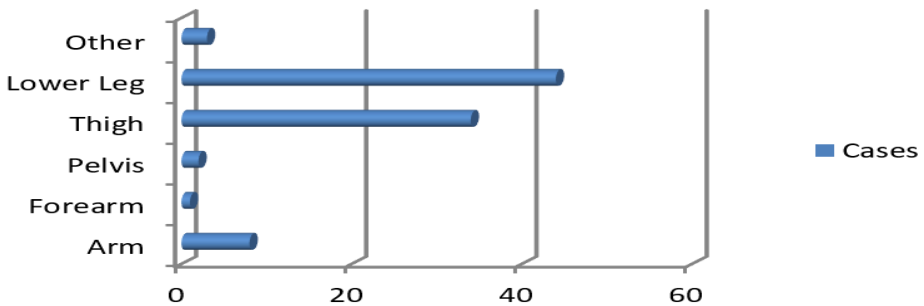

Figure 10**.** Localization of Osteosarcoma

From all our osteosarcoma patient, 42 cases (46%) had undergone surgical procedure. 34 cases (81%) had been treated with amputation, and for the rest 8 cases (19%) had undergone limb salvage procedure.

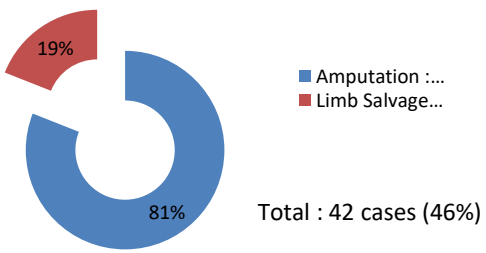

Figure 11**.** Osteosarcoma Operation

RESULTS AND DISCUSSION

This paper presents a record of musculoskeletal tumors from a single institution that caters to one Province in Indonesia. Although relatively small, with a population of 915.707 in the mid 2018 according to the most recent population census, Malang is representative of Indonesia countries.Thus, the presented incidence of malignant musculoskeletal tumors in this report isassumed to be very accurate, and gives a quality representation ofthe epidemiology of malignant musculoskeletal tumors in our nation.

This study has several limitations. This is a retrospective reviewof prospectively gathered data, and as the data was collected, wenoted lost of data due to lost of contact. Among the malignant tumors, osteosarcoma was the most commonly encountered, with 92 cases (24,8%) of all musculoskeletal tumors.This fact is well described in the literature, and osteosarcoma is considered to

be the most common bone malignancy.[4-13] The second most common malignant tumor in our study was Giant Cell Tumor with 36 cases (9,7%) of all tumors.This finding contrast with the literature, as Dorfman et al. reportedon primary bone sarcomas and placed chondrosarcoma second onthe list, with it accounting for 25.8% of all sarcomas.[14]

CONCLUSSION

Incidence of musculoskeletal tumor arising each year with high number of malignancy cases. Patients survival rates increased after early detection and undergo complete treatment.

This study gives an overview of trends in musculoskeletal tumors in a uniformIndonesian population over a 7-year period.The anatomical distribution of tumors given here further assertsthat these tumors have consistent predilection for specificlocalizations, and being aware of the anatomical location affectedcan prompt the correct diagnosis, enabling faster treatment. Data based system will help to evaluate prognosis of the patient and will give acces to gather data for new research inmusculoskeletal tumor. The main problem is that we are not the only department treating musculoskeletal tumors, there are still patients being treated without consulting our department. Financial problems, governmental and hospital support, and patients mindset regarding operations are some other problem restricting us from delivering the ideal oncology services.

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