ORIGINAL RESEARCH PAPER

Oncology

DESCRIPTIVE ANALYSIS OF OSTEOSARCOMA IN QUITO- ECUADOR

KEY WORDS: Osteosarcoma, Quito, Ecuador

Díaz Cepeda Patricio Benjamin	Independient investigator
Urquizo Albán Ligia Elena	Independient investigator
Castellano Bohórquez Esthela Lorena	Independient investigator
Enríquez Dávila David Alejandro	Independient investigator
Jarrín López Francisco Xavier	Independient investigator
Rivera Obando Alain Michel	Independient investigator
Tinillo Hernández Irene Carolina	Independient investigator

ABSTRACT

Introduction: Osteosarcoma are very heterogeneous tumors having for example osteoblastic, chondroblastic, fibroblastic, and telangiectatic osteosarcoma, the objective of this research is determining the demographic characteristics of patients with osteosarcoma in Quito-Ecuador . **Methods:** An epidemiological descriptive analysis of the patients treated at our institution was carried out from 2000 to 2014. **Results:** 277 individuals were analyzed; 168 men and 109 women, of which there are a higher incidence of osteosarcoma in relation to younger people, especially under 18 years old, as well as a higher incidence of conventional osteosarcoma expressed in 70.4% and a greater presence of this pathology in the lower extremities **Conclusion:** There is a great expression of osteosarcoma in young people and in the lower extremities, it is important in a second investigation carried out an analysis of survival and evaluation of treatment schemes.

INTRODUCTION

Bone sarcomas belong to mesenchymal tumors that originate in the bone and are made up of highly heterogeneous subtypes. (1–3)

The three main bone sarcomas are osteosarcoma, Ewing's sarcoma, and chondrosarcoma. (4)

Mesenchymal stem cells (MSCs) are located in most tissues and have the ability to differentiate into various mesenchymal tissues, including bone and cartilage. (4–6)

The runx2 and sox9 genes induce hierarchical regulation of MSC-modulated downstream genes and drive differentiation of MSC into an osteoblastic and chondroblastic lineage. (4,7–9)

Osteosarcoma cells can express osteoblastic markers such as alkaline phosphatase, osteocalcin, or bone sialoprotein and show great capacity to form osteoid tissue and induce mineralization of the extracellular matrix. (4)

Chondrosarcoma cells share common characteristics with chondrocytes and express chondrocyte markers such as collagen or type II aggrecan. (10–12)

Osteosarcoma, Ewing sarcoma, and chondrosarcoma are separated into three different clinical entities identifiable by the affected patient populations, their location, and their biological characteristics. (6,13,14)

Osteosarcoma is the most frequent primary malignant bone tumor with a higher incidence in adolescents and young adults. (4,7)

Osteosarcoma are highly heterogeneous tumors and consequently the quality of the secreted extracellular matrix (osteoblastic, chondroblastic, fibroblastic, telangiectatic osteosarcoma). (4)

The main areas affected by osteosarcoma are the metaphysis of the long bones, preferably the proximal end of the tibia / fibula corresponding to the location of the growth plate. (4,10.11)

The objective of the present investigation is to determine the demographic characteristics of the patients with osteosarcoma in Quito-Ecuador.

Variable		n	%
Sex	Men	168	60
	Women	109	40
		277	100
Age	<18 years old	122	44.0
	18-25 years old	59	21.3
	25-40 years old	33	11.9
	>40 years old	66	22.7

Histology of osteosarcoma	conventional	195	70.4
	condroblástico	19	6.9
	telangiectásico	7	2.5
	Condrosarcoma	56	20.2
Extremit	upper extremity	33	11.9
	lower extremity	176	63.5
	spine	4	1.4
	skull	10	3.6
	clavicle or sternum or rib	9	3.2
	pelvis	19	6.9
	soft tissue	16	5.8
	mandible	10	3.6

Table 1: Descriptive analysis of Osteosarcoma.

METHODS

A descriptive epidemiological analysis of the patients treated at our institution from 2000 to 2014 was carried out, for which a data collection was made from the electronic medical records database.

Statistical analysis was based on descriptive analysis and chi square variables comparison.

RESULTS

A descriptive analysis of 277 individuals was performed; 168 men and 109 women, of which there may be a higher incidence in relation to those under 18 years of age, as well as a higher incidence of conventional osteosarcoma expressed in 70.4%, as well as a greater presence of this pathology in the lower extremities.

For mayor Description, This analysis has been consolidated in Table 1.

In relation to the cross analysis of variables, we can see that in relation to age, there is a higher prevalence of Osteosarcoma in young ages under 40 years old, however, the fact of greater presence of Chondroblastoma in those over 40 years of age is striking, p = 0.000 Figure 1, in the same way in Figure 2, greater expression of this pathology can be seen in the lower extremities, whereas in patients over 40 years of age it is seen in short bones and the axial axis of the skeleton, p = 0.000.

Fig. 1 Age relationship with Tumor Histology

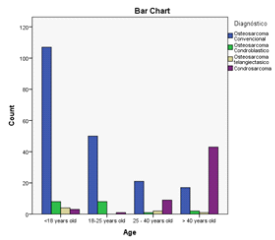
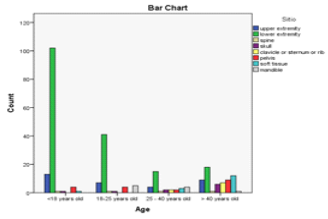


Fig. 2. Relationship between age and tumor location.



DISCUSSION

Osteosarcoma is the most common malignant bone tumor in children and adolescents, representing approximately 2.5% of all cancers in children under 15 years of age and 4.2% in young people between 15 and 19 years of age, for the record Population of Cali (Colombia) reports an incidence adjusted for age and sex of 4.2 cases per million in children under 15 years of age. (15)

In Ecuador it is the most frequent primary malignant bone tumor. According to data from the National Institute of Statistics and Censuses (INEC), in 2015, 36 cases of osteosarcoma were diagnosed in Ecuador in children under 20 years of age. The incidence of this cancer is 6.2 in men and 4.5 in women per million inhabitants. (16)

In our research we can determine that we have similar data to that reported nationally and with Colombia, although there is little research in our country on this topic, this would be one of the first studies that will open up analysis in this field.

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