



Solid Tumor in Children: A Single Centre Experience

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Key words:

Childhood solid tumor, tumor register, neuroblastoma, neuroblastoma, Hodgkin lymphoma, sacrococcygeal teratoma, ovarian tumor.

Abstract:

Introduction: Now a days, number of childhood tumors are gradually increasing throughout the world. But in Bangladesh we have no actual tumor register. In this study we just try to find out the demographic presentation of solid tumor in a tertiary care center of Dhaka city.

Methods and materials: it is a retrospective descriptive type of observational study. Study was held in department of pediatric surgery, Sir Salimullah medical college Mitford hospital Dhaka from January 2016 to December 2020.

Results: total number of the patients were 37. Male 15 and female 22. Male female ratio is 1:1.7. Age range of the patients from 9 days to 13 years. Mean age 135.83 days. Among 37 patients, 29 had malignant tumors and rest of 8 patients had benign tumor. Ovarian tumors were highest, 10. Then neuroblastoma 9, neuroblastoma 7, non Hodgkin lymphoma 3, sacrococcygeal teratoma 3, adrenal benign tumor 1, soft tissue sarcoma in pelvis 1, rhabdomyosarcoma of urinary bladder 1, rectal carcinoma 1 and rhabdomyosarcoma of lower limb 1 accordingly. Most of the patients were went through surgery first then sent for chemotherapy according to histology.

Conclusion: In spite of a tertiary medical care center in Dhaka city, our number of patient is not satisfactory. Lack of proper awareness in public, lots of patient did not reach to proper center, those who attained hospital, may lost. And our poor record keeping system is also responsible for adequate informations.

Introduction:

In Bangladesh we have a very little statistical information regarding childhood tumors. Pediatric solid tumors are non hematologic extra cranial cancer occur during childhood. This heterogeneous group of tumor represents approximately 40% of all cancer in children.¹ In USA malignancy is the second most common cause of death in children older than one year of age.² Analyzing the

worldwide incidence, in Bangladesh it may be 1300 new cases per year in under 15 years of age group population.³

Brain tumors are the most common solid tumor of childhood. After that lymphoma, neuroblastoma, soft tissue sarcoma, Wilms' tumor, germ cell tumors, osteosarcoma, retinoblastoma and hepatoblastoma are common.² But in our institute we encounter mainly Wilms' tumor, ovarian

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tumor, neuroblastoma along with some others malignant and benign tumors.

Due to collaborative efforts of pediatric surgeons, pediatric oncologists and radiation therapists tumor survival rate has increased. But the total treatment cost and duration of treatment is not suitable in a low socioeconomic country like ours. Lack of proper awareness and knowledge is another factor for advanced presentation. Late diagnosis and advanced disease 20% of cases are incurable at presentation and 43% families refused treatment or stopped in middle.⁶

Methods and materials: it is a retrospective descriptive type of observational study. Study placed in department of pediatric surgery in Sir Salimullah Medical college Mitford hospital Dhaka during the time period of January 2016 to December 2020.

Results: we had a total of 37 patients. Among them, 22 were female and 15 were male. So the male female ratio is 1:1.7. Ages of the patients were from 9 days to 13 years. Mean age of patients was 135.83 days. Benign tumors were 8 and rest were malignant. 10 were ovarian tumor both malignant and benign. Which were 28% of total abdominal solid tumors. Out of them 6 were germ cell tumor and 4 were matured dermoid. Neuroblastoma 9(25%). Neuroblastoma 7(20%). Non Hodgkin lymphoma 3(8.5%).. One patient was

with sex hormone producing adrenal tumor(2.8%). One patient with small round cell soft tissue sarcoma in pelvis (2.8%)one was with rectal carcinoma(2.8%), 2 rhabdomyosarcoma; 1 in urinary bladder, 1 in lower limb and 3 patients sacrococcygeal teratoma(8.5%). All the tumors were confirmed by histopathology after excision.

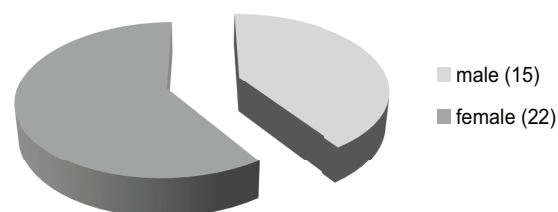


Fig.-1 : Distribution of male and female patients of solid tumour

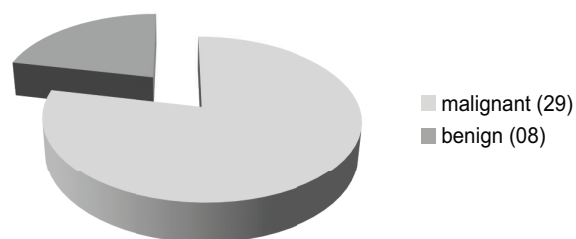


Fig.-1 : Distribution of malignant and benign tumors

Table I. Total distribution of abdominal tumors

Types of tumors	Number of patients	%
Malignant tumors :		
Nephroblastoma	9	24.32%
Neuroblastoma	7	18.91%
Germ cell tumor of ovary (GCT)	6	16.21%
Non Hodgkin lymphoma (NHL)	3	8.10%
Soft tissue sarcoma	1	2.70%
rhabdomyosarcoma	2	5.40%
Carcinoma of rectum	1	2.70%
Bening tumors:		
Mature dermoid of overy	4	10.81%
Sacrococcygeal teratoma	3	8.10%
Sex hormone producing bening tumor of adrenal gland	1	2.70%

Discussion:

Cancer in children is emerging as significant threat of life due to decreasing death from infectious disease and malnutrition.⁴ Five years survival rate has increased in cancer patients of developed countries. But it is only 10% in low income countries.⁶ In Bangladesh, we have no accurate data in this field due to the lack of systemic and effective recording systems of medical records in public hospitals⁵ Moreover it is a multidisciplinary approach. Patients have to go through different faculties for proper treatment. It is difficult for most of the poor uneducated people. Finally, predicted cancer treatment cost in UK is 100000 pounds per children.³

We have a total of 37 patients in last five years, among them 29 were malignant, which does not represents the actual predicted incidence.

Only three patients were come from oncology department after received neoadjuvant chemo therapy. Most of the patients came with abdominal complains, like pain and distention. Few of them had features of intestinal obstruction.

All the patients were diagnosed by USG and CT scan or MRI. Other biochemical investigations were done as needed for diagnosis like urinary VMA in suspected neuroblastoma patients. Complete blood count, coagulation profile, liver function test, serum creatinine, serum electrolyses and chest X ray were done before operation.

In case of neuroblastoma or Wilms' tumor we mainly follow COG protocol. First we excise the tumor then send for histopathology. Out of our 9 patients we sent only 2 patients for pre operative chemotherapy due to the huge mass. One of them had both local and hepatic metastasis.

Out of 7 neuroblastoma patients, 6 tumor were present on adrenal gland and only 1 in lumbar sympathetic trunk. 2 of them have had get chemo before operation. All were sent for chemotherapy after total excision of tumor.

All ovarian malignant tumors were germ cell tumors. We had excised in toto then send for chemotherapy. But we had no germ cell tumor of testis.

We had 2 rhabdomyosarcoma patients. One in lower limb and another in urinary bladder. We excised the limb tumor. But bladder tumor was in beyond our settings, so we referred it.

Only one rectal carcinoma patient was presented to us in a very advanced stage. As we have no adequate facilities for proper treatment we referred the patient to National Institute for cancer research (NICRH).

Post operative period of all the patients were uneventful. We discharged patients on 5-7th post operative day after consulting with hemato oncology department regarding their post operative chemo therapy.

Solid tumor in children is different from adults. Most of tumors are thought to arise from aberrant tissue formation during the normal process of organ development in early infancy or rapid growth in puberty. Blast cell tumors are common before 5 years of age. We had also got the patient of nephroblastoma and neuroblastoma patient more. As we do not deal with CNS tumors and retinoblastoma, so we did not admit them in our department. But surprisingly we had no hepatoblastoma patient. Wendy Allen – Rhoades and his colleagues shown that germ cell tumors is most common solid tumor in adolescents. [7]. In our series we had total 13 patients with germ cell tumors. Among them 10 were ovarian teratoma both malignant and benign and 3 were sacrococcygeal teratoma.

Conclusion:

We need to increase more public awareness regarding solid tumors. Interaction between the departments which deal with cancer patients may need further improvement. Cost of chemotherapeutics agents should be reduced. Finally, we need to build up a systemic data collection monitoring system in tertiary care centers. Cancer registry is the demand of now a day.

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