

A Retrospective Study of Wilms Tumour in Our Institute

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ABSTRACT

Introduction: Wilms tumor (WT) accounting for 6-7% of all childhood cancers is the most common renal tumour in childhood. We conducted this study to review the outcome of multimodality treatment of Wilms' tumor at our institute.

Material and Methods: The clinicopathological profile of 8 cases of Wilms' tumor between 2011- 2015 were studied with NWTS (National Wilms' Tumor Study Group) protocol. Data was retrospectively analyzed to determine the outcome of treatment which consisted of unilateral Radical Nephrectomy followed by radiotherapy and chemotherapy based on histopathological staging of the tumor.

Results: Eight patients were diagnosed and confirmed histopathologically as Wilms' tumor between June 2011 through June 2015 and outcomes correlated with age, laterality of tumour, sex, stage at presentation and histology. Favourable histology including focal anaplasia was found in 62.5% while unfavourable histology was elicited in 37.5% of the cases. On follow up, six out of eight patients are doing well while one had pulmonary metastasis and one expired.

Conclusion: We successfully managed cases of Wilms tumour with comparable results of other studies.

Keyword: Wilms tumour

Exclusion criteria

Patients who had preoperative radiotherapy and/or chemotherapy were excluded from study.

STATISTICAL ANALYSIS

These patients data was coded into a Microsoft Excel spreadsheet (Redmond, WA) and results were expressed as percentages, median or mean.

RESULTS

Of these 8 patients, 4 were males and 4 were females (M/F = 1:1). Median age of presentation was 48 months. The modes of presentation are shown in Table-1. Abdominal mass and/or abdominal distension was the most common presenting symptom which was seen in 6 (75%) cases. Other symptoms and signs included abdominal pain in 1 patient (12.5%), hematuria in 1 patient (12.5%). There were no bilateral cases in our study.

Left kidney was affected in 5 (62.5%), and the right one in 3 (37.5%) cases. The distribution of 8 operated patients according to the surgical stage was: stage I 12.5%, stage II 37.5%, stage III 25%, stage IV 25%, and stage V 0%.

Favorable histology was diagnosed in 62.5% and unfavorable histology in 37.5% of the patients. The relapse-free and overall 4 year survival rates were 75% and 87.5%, respectively.

DISCUSSION

Wilms' tumor is the most common renal tumor of infancy and childhood. It affects one child per 10,000 worldwide before the age of 15.^{1,2}

The male/female predominance varied with geography of study. In our study the incidence of tumor was similar in males and females which was similar to that of Europe. Studies from America reported a female predominance.^{5,6}

The median age of presentation in our study was 48 months. This was similar to many other studies like the South African study where the median age of 39 months¹¹ and the GFAOP group where the median was 36 months.

Abdominal mass and/or distension was the most common mode of presentation (75%) which was similar to that of United Kingdom Children's Cancer Study Group (UKCCSG) where 74% of cases presented with abdominal mass.

Our study showed a predilection towards the left side (62.5% of

INTRODUCTION

Wilms' tumor (nephroblastoma) is the most common primary malignant renal tumor of childhood.^{1,2} This embryonal tumor develops from remnants of immature kidney. Wilms tumor accounts for 6 to 7% of all childhood cancers.³ In children less than 15 years of age, the annual incidence rate is about 7 to 10 per million.^{1,2} The treatment of Wilms' tumor has been improved in the past two decades, with the aid of multimodal therapy protocols.^{4,6} The radical changes in multimodality management of Wilms tumor off late transferred to a better outcome of these lethal cases. Though there are many studies conducted world wide, studies conducted in India per se are sparse. Hence, we conducted this study to evaluate the results of Wilms' tumor obtained in our Centre.

MATERIAL AND METHODS

Eight patients were studied in the period between June 2011 and June 2015 in Venkateswara Institute of Medical Sciences, Tirupati, Andhra Pradesh.

The clinical profile, presenting features, the stage of tumor, histopathologic results, and the survival rates were noted down. In all patients, histopathological classification and clinical staging were done according to the NWTS Group.⁷ At our centre, patients are also treated as per NWTS protocol where in patients with unilateral Wilm's tumor were treated surgically, followed by adjuvant chemotherapy and/or radiation.

Inclusion criteria

All the patients who were diagnosed as Wilms' tumor and who underwent management as per NWTS protocol between June 2011 and June 2015 were included in study.

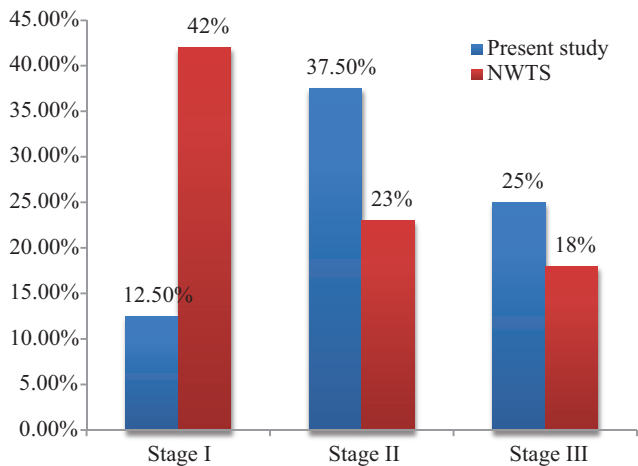
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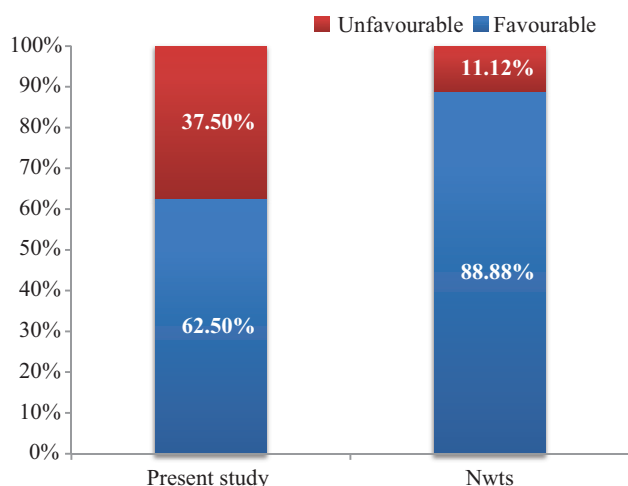
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Presenting sign/symptom	No of cases	Percentage
Abdominal mass and abdominal distension	06	75%
Hematuria	01	12.5%
Abdominal pain	01	12.5%
Bilateral disease	00	00%
Congenital anomalies	00	00%

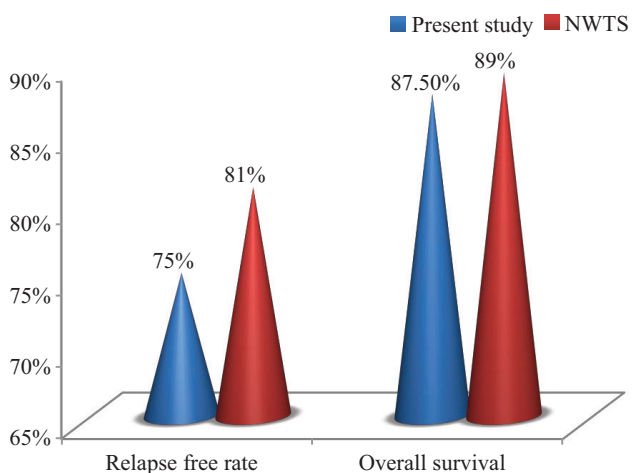
Table-1: Mode of presentation of Wilms tumor in this study



NWTs - National Wilms Tumor Study
Figure-1: Distribution of surgical stages



NWTs - National Wilms Tumor Study
Figure-2: Histopathology findings



NWTs - National Wilms Tumor Study
Figure-3: Relative relapse-free survival rate and overall survival rate

cases) which was compatible with the report of Lemerle et al, but in contrast to Mott et al who reported the similar right and left kidney involvement.^{13,14}

When surgical stages of our patients were compared with that of NWTs3, we found that in NWTs3, stage I patients constituted 42% of all patients⁸, while it was 12.5% in our study. Stage II patients constituted 37.5% of our study population compared with 23% in NWTs3 patients. Stage III patients constituted 25% of our study population compared with 18% in NWTs3 patients.⁸ This difference in stage distribution might be due to the fact that in developing country like India often patients have delayed approach to health care facility complemented with lack of adequate number of tertiary care centres and lack of screening facilities for early diagnosis.

62.5% of our patients had favorable and 37.5% had unfavorable histology compared to favourable histology of 88.88% and unfavourable histology of 11.12% in NWTs.⁸

Relative relapse-free survival rate and overall survival rate at 4 years in our study were 75% and 87.5%, respectively which were little lower to NWTs3 (81% relapse free survival and 89% overall survival rate) and United Kingdom Wilms' tumor Study 1 (UKWS 1 (overall survival rate of 83% at 6 years)) results.¹⁰ This might be due to lower percentage of stage I cases and higher percentage of stage II cases in our study.

CONCLUSION

The present study establishes our success in managing wilms tumour in developing country with comparable relapse free and overall survival rates of studies from developed world. Lack of cytogenetic investigation was one of the pitfall in our study. A larger sample size would provide better insight with respect to the general finding of these results.

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