Challenges in the management of Wilms Tumor in a developing country: A twenty years experience from a single centre in Pakistan.

Muhammad Khan[1], Ata Maaz[2], and Muhammad Ashraf[3]

[1]King Faisal Specialist Hospital and Research Center, Madinah
[2]Sidra Medical and Research Center
[3]The Indus Hospital

May 26, 2021

Abstract

Background: Wilms Tumour (WT) is one of the most curable childhood cancers. High cure rates seen in the high-income countries are not duplicated in low and middle-income countries due to several constraints. We reviewed our data over the last 20 years in order to highlight some of these challenges. Methods: This is a retrospective review of medical notes of children with WT under the age of 18 years presenting to our institution between 1 November 1997 and 30 November 2017. Demographic, presentation and treatment details were recorded and factors associated with poor outcome were analysed. Results: Of the 211 children presenting with WT 117(55.5%) were males. Median age at presentation was 3 (Range 0-18) years. One hundred and twelve (53.7%) of these presented without any prior treatment, while 72 (34.1%) presented after tumour excision. Metastatic status was available for 178 patients; 117 (68%) had localised tumours, 36(21.8%) had metastatic disease and 25(11.9%) presented with recurrent mass. Thirty-nine (18.4%) patients refused treatment and 6(2.8%) died before starting treatment. During treatment, 23(13.4%) children died and 21(12.2%) abandoned. Only 99 patients finished treatment, 83 (83.8%) of whom are well off therapy and 15 (15.2%) have relapsed. Six (40%) of the 15 children who relapsed are alive after salvage therapy, while the remaining 9 (60%) have died. Conclusions: Our data highlights the challenges of managing WT in resource poor environments. Prior surgery, incomplete staging work-up and abandonment are some of the most frequently encountered barriers. A multipronged approach is required to overcome these challenges.

TITLE: Challenges in the management of Wilms Tumor in a developing country: A twenty years experience from a single centre in Pakistan.

Author 1

NAME: Muhammad Rahil Khan

ADDRESS: Department of Paediatric Haematology/ Oncology, King Faisal Specialist Hospital, Al Madina al Munawara, Saidi Arabia

Author 2: **Corresponding author:**

NAME: Ata Ur Rehman Maaz

ADDRESS: Department of Pediatrics, division of Haematology/Oncology, Sidra Medicine, Al-Luqta Street, P.O. Box 26999, Doha, Qatar

Email: amaaz@sidra.org

PHONE: +974 40036591

FAX:

Author 3:

NAME: Muhammad Shamvil Ashraf

ADDRESS: Department of Paediatric Haematology/ Oncology, Indus Hospital and Health Network, Karachi, Plot C-76, Sector 31/5, Opposite Darussalam Society, Korangi Crossing, Karachi 75190, Pakistan

Email: Muhammad.shamvil@gmail.com

Word count: Abstract: 250

Main text: 3186

Number of tables: 2

Number of Figures: 3

No supporting information file

Short Running Title: Challenges of managing Wilms Tumor in Pakistan

Key words: Wilms Tumour, Nephroblastoma, Abandonment, Challenges, Barriers

Abbreviation Key:

Abbreviation	Key
WT	Wilms Tumor
NWTSG	National Wilms Tumor Study Group
COG	Children's Oncology Group
SIOP	International Society of Paediatric Oncology
HIC	high income countries
LMIC	Low and middle income countries
ASIR	Age standardised incidence rate
IRB	Institutional review board
Gy	Gray
OS	Overall survival
EFS	Event free survival
SMN	second malignant neoplasms
SPSS	Statistical package for social sciences

Hosted file

PBC WT manuscript 5521[1].docx available at https://authorea.com/users/415905/articles/523654-challenges-in-the-management-of-wilms-tumor-in-a-developing-country-a-twenty-years-experience-from-a-single-centre-in-pakistan

Hosted file

PBC WT TABLE 1 .docx available at https://authorea.com/users/415905/articles/523654-challenges-in-the-management-of-wilms-tumor-in-a-developing-country-a-twenty-years-experience-from-a-single-centre-in-pakistan

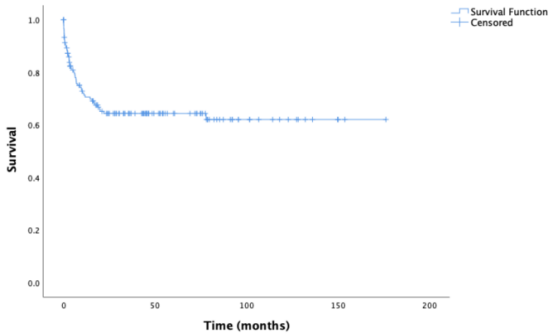
Hosted file

PBC WT TABLE 2 .docx available at https://authorea.com/users/415905/articles/523654-challenges-in-the-management-of-wilms-tumor-in-a-developing-country-a-twenty-years-experience-from-a-single-centre-in-pakistan

Hosted file

Figure 1 Final.docx.pdf available at https://authorea.com/users/415905/articles/523654-challenges-in-the-management-of-wilms-tumor-in-a-developing-country-a-twenty-years-experience-from-a-single-centre-in-pakistan

Figure 2: Kaplan-Meier estimates of overall and event free survival for all patients with Wilms Tumour



A: Overall survival (OS): 66.7% after median follow-up of 113 (range 99-127) months.

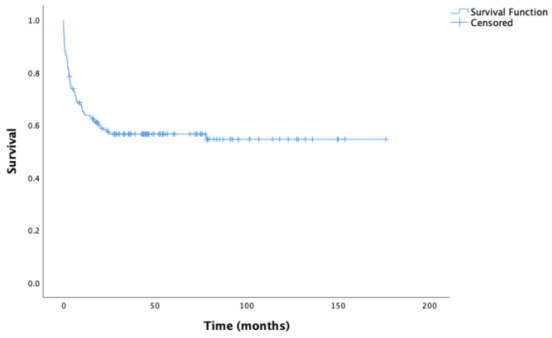


Figure 2B: Event free survival (EFS): 56.9% after median follow-up of 100 (range 86-114) months.

Figure 3: Determinants of poor outcome for Wilms Tumour in low and middle income countries (LMIC).

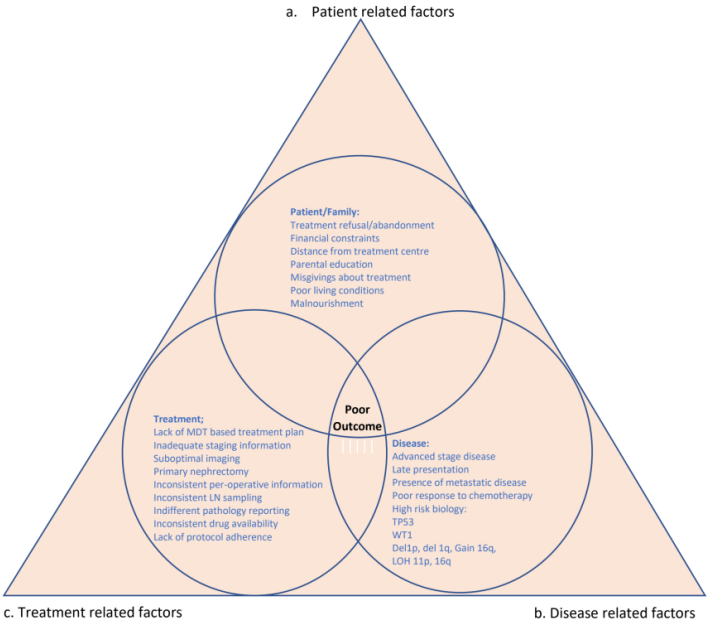


Figure 3: Poor outcome for WT is a result of interplay between (a) patient-related, (b) disease-related and (c) treatment-related factors, which are inter-dependant and not mutually exclusive.