

CLINICAL PROFILE AND OUTCOME OF CONFIRMED COVID-19 PEDIATRIC PATIENTS WITH SOLID TUMORS ADMITTED AT A TERTIARY HOSPITAL FROM MARCH 2020 TO MARCH 2022: A TWO-YEAR RETROSPECTIVE STUDY



JANE D. ESTRERA - MANLATICAN, MD; ALLYNE M. AGUELO, MD, FPPS, FPIDSP; CHERYL LYN A. DIEZ, MD, FPPS, FPSPO, DSPH, DSPHBT
SOUTHERN PHILIPPINES MEDICAL CENTER, DAVAO CITY, DAVAO DEL SUR

Background and Objectives

SARS-CoV-2 virus causes Covid-19, affecting people across various age groups. Limited research on Covid-19 in children shows mild symptoms, but those with compromised immunity, especially pediatric oncology patients face increased risks (Tezer, 2020; Kahn et al., 2022). Pediatric oncologic patients with Covid-19 tend to have severe outcomes and higher mortality rates compared to non-oncologic cases (Kahn et al., 2022). However, some studies report favorable outcomes, attributing them to reduced immune response and potential resistance in children (Ferrari, 2020). The study aims to investigate the clinical profile of pediatric patients with solid tumors and Covid-19 at a tertiary hospital.

Methodology

- Retrospective review of medical charts of all confirmed Covid-19 pediatric patients diagnosed with solid tumors admitted from March 2020 to March 2022.
- The clinic-demographic profile was analyzed using descriptive statistics

Department Research Committee and Joint Research Ethics Committee (JREC) Review and Approval



Data Collection from Hospital Health Information Management Department (HIMD)



Data Analysis and Interepration



Data Submission and Documenation

Reference



Results

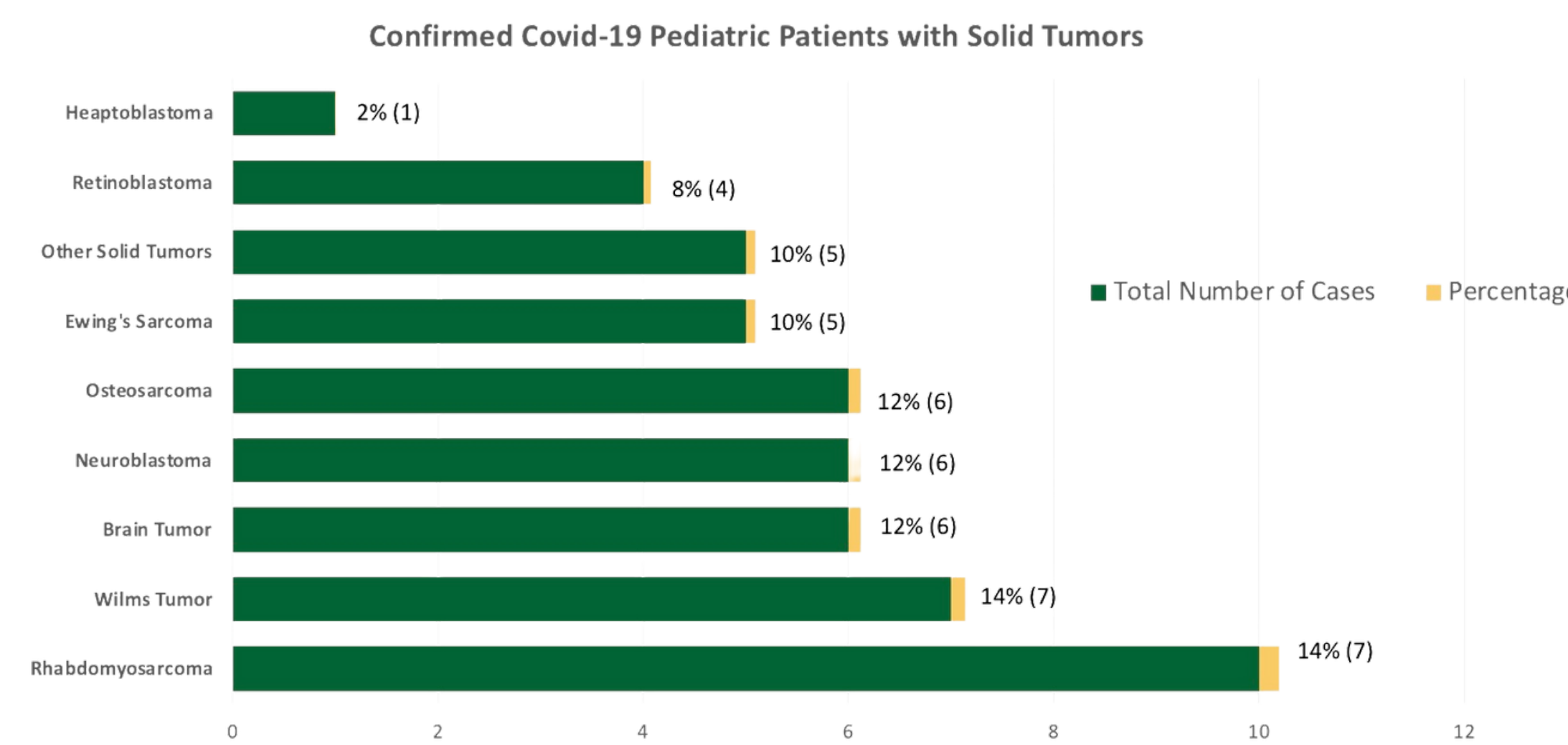
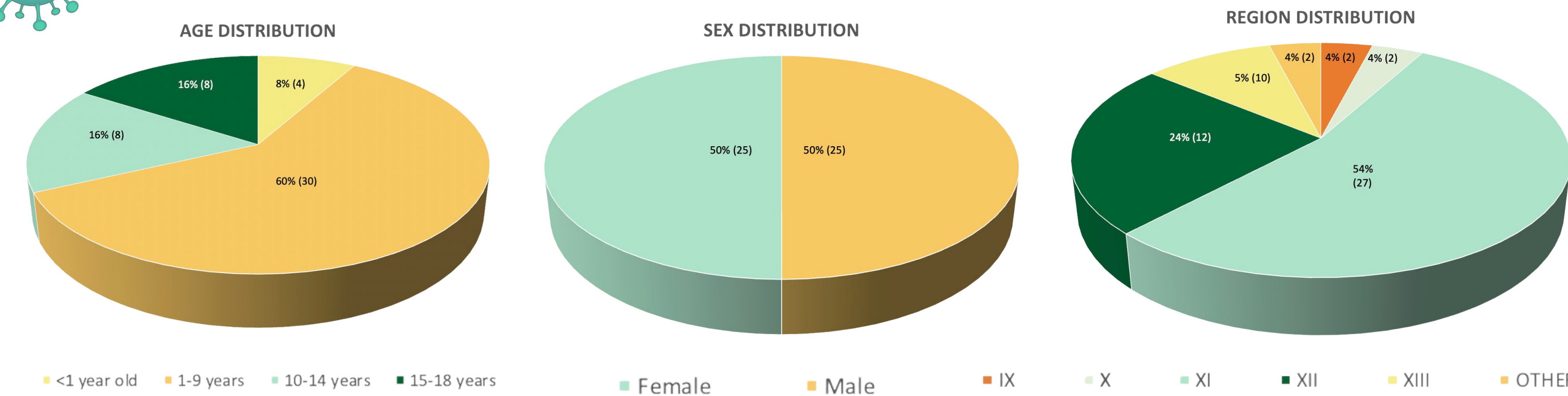


Table 3. Covid Symptoms Severity of Confirmed Covid-19 Pediatric Patients Diagnosed with Solid Tumor

Covid Symptoms Severity	No. of Cases	(%)
Asymptomatic	21	42.0%
Mild	11	22.0%
Moderate	17	34.0%
Severe	1	2.0%
Critical	0	0.0%
No Data	0	0.0%

Table 4. Clinical features, treatment, and outcome of Confirmed Covid-19 Pediatric Patients Diagnosed with Solid Tumor

Characteristics	No. of Cases	(%)
Clinical Features		
Asymptomatic	21	42.0%
Fever	14	28.0%
Cough	3	6.0%
Sore throat	0	0.0%
Dyspnea	0	0.0%
Coryza	0	0.0%
General weakness	2	4.0%
Anorexia	0	0.0%
Nausea/Vomiting	1	2.0%
Diarrhea	0	0.0%
Myalgia	0	0.0%
Headache	1	2.0%
Altered Mental Status	0	0.0%
Multiple Symptoms	6	12.0%
Others	1	2.0%
No Data	1	2.0%
ANC Level		
> 1,500	35	70.0%
1000 - 1,500	3	6.0%
500 - 1000	5	10.0%
< 500	7	14.0%
No Data	0	0.0%
Treatment Type		
Cancer directed Therapy	45	90.0%
Completed Treatment in Remission /Post Treatment Monitoring	1	2.0%
Tumor Recurrence/Relapse	2	4.0%
Abandonment of Treatment	1	2.0%
Missing Data	1	2.0%
Covid Treatment		
Supportive Meds (Vit D, C, Zinc)	46	92.0%
Oxygen Support	3	6.0%
Antibacterial use	13	26.0%
Antiviral use	0	0.0%
Systemic Corticosteroids	12	24.0%
Immunoglobulin therapy (IVIG)	2	4.0%
Anticoagulant (Enoxaprin)	0	0.0%
PICU Care	4	8.0%
Missing Data	0	0.0%
Outcome		
Alive	46	92.0%
Expired	4	8.0%
Missing Data	0	0.0%

Discussion

The study focuses on the clinical profile and outcomes of pediatric patients with solid tumors diagnosed with COVID-19 at a tertiary hospital from March 2020 to March 2022. Out of 74 patients, 67.6% tested positive for COVID-19. Most cases (60%) were in the 1 to 9 years age group, aligning with similar findings in a study at St. Jude Children's Research Hospital (Mukkada, 2021). Gender-wise, there's an equal distribution of cases attributed to both males and females; however several studies have consistently indicated a higher prevalence among males (Tuladhar 2021; Mukkada, 2021). Rhabdomyosarcoma had the highest cases (20%), followed by Wilms tumor, Brain tumors, Neuroblastoma, and Osteosarcoma (Tuladhar 2021; Mukkada, 2021).

The majority (42%) of patients were asymptomatic, while 17% exhibited moderate symptoms like fever. This aligns with other studies suggesting mild or asymptomatic infections in pediatric oncology patients, with only one severe case reported (Tuladhar, 2021). Despite ongoing cancer-directed therapy in 90% of cases, most patients had relatively high ANC, indicative of strong immunity.

Treatment for COVID-19 involved supportive medications (92%), including Vitamin D, Vitamin C, and Zinc. Only 24-26% received antibiotics and corticosteroids, recommended for COVID-19 management (PIDSP, 2022). While four cases required intensive care and mechanical ventilation, all succumbed to death, conflicting with some studies suggesting a higher likelihood of severe outcomes in oncologic patients (Afshar, 2021).

The data showed that 92% of pediatric patients were alive, indicating recovery from the acute phase of COVID-19 or effective management. This aligns with studies reporting a 100% recovery rate for children with cancer not at risk of severe infection (Sneha, 2021). Overall, the study concludes that mortality and morbidity from COVID-19 in pediatric oncology patients were low.

Conclusion and Recommendation

The study showed that this population faces challenges, given the dual burden of a solid tumor and Covid-19. Majority of the patients diagnosed with solid tumors and Covid-19 infection were coming from ages 1-9 years old and asymptomatic or have mild to moderate Covid-19 symptoms. Furthermore, the research findings also highlighted that majority of patients survived and exhibited a notably low mortality rate.

Based on the findings the following recommendations are forwarded: (1.) Association on the delay of chemotherapy and Covid Severity; (2.) Clinical profile and outcomes on a combined study of both solid tumor, leukemia and lymphoma. These refined recommendations aim to provide a comprehensive framework for future studies and interventions, ensuring a nuanced understanding of the intricate interplay between Covid-19 and pediatric oncology.