

ORIGINAL ARTICLE

CLINICO-DEMOGRAPHIC PROFILE AND OUTCOME OF PEDIATRIC HIV/AIDS PATIENTS IN WESTERN VISAYAS MEDICAL CENTER**ABSTRACT**

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Objective: Pediatric HIV is a national health concern that has grown exponentially in the past 5 years. This study aimed to determine the clinico-demographic profile and outcome of pediatric HIV/AIDS patients 0-18 years old seen at the Western Visayas Medical Center (WVMC) HIV/AIDS Treatment Hub from March 2006 to September 2018.

Methods: Medical chart records of all pediatric HIV/AIDS patients seen at the treatment hub during the study period were reviewed. Data on clinical and demographic profile and outcomes were gathered and descriptive statistics was used to analyze data.

Results: A total of 30 children 0-18 years old were registered consisting of 29 (97%) males and 1 (3%) female. A sudden increase in pediatric HIV patients was noted in the past 3 years, mostly among male adolescents engaged in male-to-male sexual contact (MSM). Majority (73%) were symptomatic at diagnosis with flu-like symptoms, fever and vomiting. Common physical exam findings were lymphadenopathy and rashes. HIV-related infections were tuberculosis and pneumonia. About 60% of study participants had severe immunodeficiency. Two-year mortality rate was 38%. Correlation of age and baseline CD4 count with outcome did not show any significant results.

Conclusion: Pediatric HIV/AIDS patients were symptomatic, male adolescents who engaged in male to male sexual contact. Co-infections with pneumonia and tuberculosis were common and severe immunodeficiency was present at diagnosis. Thirty-eight percent of patients had poor outcomes 2 years after diagnosis

KEYWORDS: *Pediatric HIV/AIDS, Clinico-demographic Profile*

INTRODUCTION

The global emergence of Human Immunodeficiency Virus (HIV) has a substantial impact on public health as well as on the lives of affected patients and their families. Children with HIV suffer from medical, socioeconomic, cultural, psychosocial, and treatment consequences of the disease.

The Joint United Nations Programme on HIV/AIDS (UNAIDS 2018) reports that HIV affects an estimated 36.9 million people worldwide, resulting to 940,000 Acquired Immunodeficiency Syndrome (AIDS) related deaths in 2017. About 53% of cases are in sub-Saharan Africa, followed by the Asia Pacific region which accounts for 14% of cases. Among children, approximately 5 million have died of AIDS, with an estimated 110,000 pediatric AIDS-related deaths in 2017 alone. Despite recent global reductions in HIV/AIDS statistics, there are still 1.8 million children less than 15 years living with HIV. UNAIDS reports an alarming 180,000 new infections in 2017 and an average of 400 new pediatric cases diagnosed everyday.¹ In developing countries such as the Philippines, the prevalence of HIV in children continues to increase as a result of rising numbers of HIV-infected women and inefficient measures to prevent perinatal transmission.² Furthermore, infection among older children and adolescents are increasing steadily due to early, unprotected sex.³

A thorough understanding of the epidemiology of pediatric HIV infection and course of disease may provide opportunities to minimize or possibly eradicate transmission, especially in resource poor settings. Early identification of infected children will enable adequate and prompt treatment and significantly improve quality of life. Lastly, knowledge of clinical, laboratory and epidemiologic profile and outcome of HIV-infected children will aid clinicians to formulate diagnostic and management guidelines to effectively address the special challenges presented by HIV-infected children.

The study aimed to describe the socio-demographic profile of HIV/AIDS patients as to: age, sex, residence, educational attainment, occupation; describe the clinical profile of HIV/AIDS pediatric patients as to mode of transmission, presenting signs and symptoms at consult or admission, co-morbid illness, CD4 count at diagnosis, opportunistic infections and HIV-related conditions; determine the outcome of HIV/AIDS pediatric patients at 1 month, 1 year and ≥ 2 years after diagnosis whether living, dead, or lost to follow-up; and determine the correlation between age of onset of illness and outcome and CD4 count at diagnosis and outcome.

MATERIALS AND METHODS

This was a retrospective, descriptive medical chart review of all HIV/AIDS pediatric patients enrolled at the Western Visayas Medical Center (WVMC) HIV/AIDS Treatment Hub.

Data collection was conducted from April 2018 to November 2018. Medical records of all pediatric HIV/AIDS patients 0-18 years old registered at the Western Visayas Medical Center HIV/AIDS Treatment Hub from March 2006 to September 2018 were included.

The study commenced after approvals from the Research Ethics Review Committee and the Technical Review Committee were obtained. Data was collected using paper Case Report Forms to record demographic information (age, sex, residence, educational attainment and occupation), clinical profile (mode of transmission, presenting signs and symptoms at the time of consult, co-morbid illness and CD4 count at time of diagnosis) and outcome (living, died or lost to follow-up).

The study was restricted to the review of existing medical records and the researcher did not have any direct contact with subjects. Confidentiality of patient information was maintained throughout the duration of the research by use of study codes. The medical charts of all pediatric HIV/AIDS patients in the WVMC Treatment Hub did not contain any identifying personal information and were labelled using a case number. To further protect patient data

and maintain anonymity of subjects, each case report form was assigned a 6-digit study identification (ID) number. The first four digits of the ID number consisted of the year the patient was diagnosed and the last two digits was the patient number. The case report form only contained the study ID number. On a separate document, a master list was created which contained patient case numbers along with their assigned unique study ID numbers. This file was kept separately from other documents and stored in a secure password-protected drive where only the primary investigator had access. This master list was deleted after data collection.

Data collection was conducted solely by the researcher in a designated room within the WVMC Treatment Hub. Medical records were prepared by authorized treatment hub personnel. Information from charts was recorded by the investigator.

Access to data files encoded in the computer was done with the use of a security password. Collected data were summarized and encrypted.

Information collected was used strictly for this research. Case report forms and computerized data were kept and stored securely in a locked container for the duration of the study. All printed data will be destroyed within 5 years and encoded data will be deleted permanently from the computer after 3 years.

Data collection was strictly limited to information that existed and was available in the patients' medical records. Most of these records only contained data during the patients' first and subsequent outpatient visits and medical records during admissions in the hospital, if any, were not available. Similarly, some of the data required in this study were not found in the patient's records, and lacking data were noted.

Data was analyzed using Epi Info 7 software. Descriptive data were presented as frequencies and percentages. Fisher's exact test was used to test for the significance of association of age and CD4 count at the time of diagnosis with outcomes of HIV/AIDS patients. P-value less than 0.05 was considered significant.

RESULTS

As of September 2018, the Western Visayas Medical Center HIV/AIDS Treatment Hub has catered to a total of 1,363 HIV-confirmed cases since 2006 and a total of 30 (2.2%) pediatric patients aged 0-18 years old were registered. All 30 of these were included in the study.

Figure 1 shows that there were no pediatric patients enrolled during the first six years of the WVMC Treatment Hub. The first 3 confirmed cases of HIV in children were registered in 2013. There was only one new case in 2014 and no new patients in 2015. This was followed by a surge in the number of new patients recorded starting 2016, with 9 new cases. The spike continued in 2017, where 8 new cases were reported. From January to September 2018, a total of 9 new pediatric HIV cases were diagnosed.

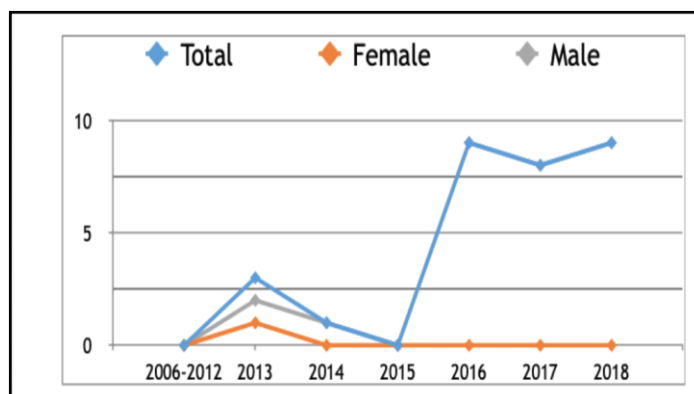


Figure 1: Number of diagnosed pediatric HIV cases per year

Figure 2 shows the profile of pediatric HIV patients as to age and sex. Out of 30 patients, 29 (97%) were males and only 1 (3%) was a female. Majority of patients (90%) belonged to the adolescent (12-18 years old) age group. The average age at diagnosis was 16.2 years old. For those in the younger age groups (<12 years old), one patient was an infant, a preschooler and a school age child. The only female patient was diagnosed in 2013 at 4 years old.

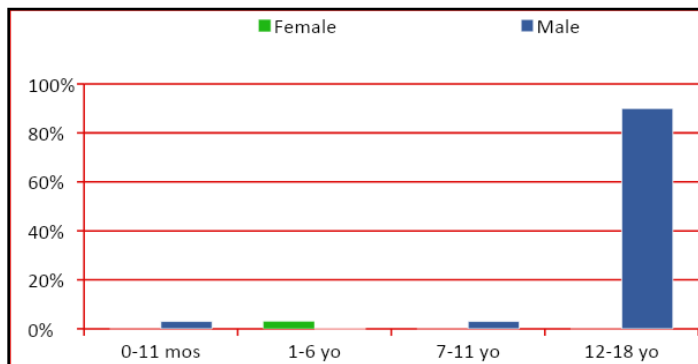


Figure 2: Distribution of patients based on age and sex

Almost half of the HIV-positive pediatric patients came from Iloilo Province (47%), followed by Iloilo City (40%), while the rest came from Capiz (7%), Antique (3%) and Guimaras (3%).

Fifty percent of pediatric HIV patients are students coming from all levels, but mostly belonging to high school and college. Four (13%) patients were employed (Table 1).

Table 1: Profile of patients as to educational attainment and occupation

Educational Attainment	N	%
Elementary	2	7
High School	9	30
College Undergraduate	8	26
Data not available/ not applicable	11	33
Occupation	N	%
Student	15	50
Employee	3	10
Farm Laborer	1	3
Data not available/ not applicable	11	33

The most common mode of transmission among patients is male-to-male sexual contact (MSM) in 27 patients (90%). Mother-to-child (MTC) transmission accounts for 10% of cases. The children recorded to have been infected vertically all belonged to the younger age group (<12 years old), the first case being a four year old female from Capiz who presented with skin lesions in 2013. This was followed in 2016 by an 8-year old male with fever who was born to HIV-positive parents. The last documented case of MTC was in 2018 in an 8 month old male infant who had recurrent cough.

Table 2 shows that majority (66%) of patients who acquired HIV through sexual transmission had multiple partners. Among these patients, 47% had 2-5 sexual contacts, 9% had 6-10 sexual partners and 14% had more than 10 sexual partners. Five (18%) patients regularly engaged in commercial sex. There were 7 (23%) patients who had sexually transmitted infections: one patient had syphilis, 3 had Hepatitis B and 3 had Human Papilloma Virus infection.

Table 2: Risk factors for sexual transmission of pediatric HIV

Risk Factors	N	%
Single partner	1	3
Multiple partners	20	66
Accepts payment for sex	5	18
Sexually Transmitted Infection	7	23

Majority (73%) of HIV-infected patients were symptomatic upon diagnosis. The most common manifestations were flu-like symptoms, such as cough and nasal catarrh seen in half (50%) of patients, followed by fever (37%) (Table 3).

Table 3: Common presenting symptoms of pediatric HIV

Presenting Symptoms	N	%
Flu-like Symptoms (cough/nasal catarrh)	15	50
Fever	11	37
Vomiting	4	13
Myalgia/ Muscle Pain	3	10
Anorexia	2	7
Nausea	2	7
Dizziness	1	3
Headache	1	3
Confusion	1	3
Fatigue	1	3
ASYMPTOMATIC	8	27

Table 4 shows that the most frequently reported clinical signs at diagnosis were lymphadenopathy (27%), rash or skin lesions (20%), weight loss (13%) and oral lesions (10%). Less common signs were pharyngitis and genital ulcers.

Table 4: Common presenting signs of pediatric HIV

Common Presenting Signs at Diagnosis	N	%
Lymphadenopathy	8	27
Rash	6	20
Weight Loss	4	13
Mouth Ulcers	3	10
Abscess	2	7
Genital Ulcers/ warts	1	3
Pharyngitis	1	3

Co-morbidities among registered pediatric patients were rare, with only 4 out of 30 (13%) children having known food and drug allergies, and 2 (7%) children having bronchial asthma.

Table 5 summarizes the most common HIV-related conditions reported among pediatric patients. Pneumonia with radiologic findings was the most frequently associated condition and accounted for almost half (47%) of cases. Tuberculosis (TB) ranked second with 10 (33%) patients diagnosed clinically with active pulmonary TB. One patient had multi-drug resistant (MDR) tuberculosis. Six (20%) patients suffered from oral candidiasis. The other opportunistic infections were staphylococcal skin lesions/abscesses (7%) and dermatophytosis (7%). One patient presented with confusion and was diagnosed with cryptococcal meningitis.

Table 5: Common opportunistic infections and HIV related conditions

Opportunistic Infections and HIV Related Conditions	N	%
Pneumonia	14	47
Tuberculosis	10	33
Oral Candidiasis	6	20
Staphylococcal Skin Infection	2	7
Dermatophytosis	2	7
Cryptococcal Meningitis	1	3

In terms of laboratory profile, most (60%) patients had an actual CD4 count of less than 200 cells/uL at the time of diagnosis. Four patients (14%) had a CD4 count of 200-499 cells/uL while only 3 (10%) patients had values >500 cells/uL. The median CD4 count of patients was 154 cells/uL (Table 6).

Table 6: CD4 count at time of diagnosis

CD4 Count (cells/uL)	N	%
<200	18	60
200-499	4	14
>500	3	10
No Data	5	17

Table 7 illustrates the outcome of pediatric HIV patients. The first mortality was recorded in 2013, and he was an 18-year old male diagnosed with multi-organ failure, cryptococcal meningitis and MDR-TB. Along with an increase in the number of enrolled cases in 2016 was a peak in mortality rate, one of which was an 18-year old male with poor history who died at the emergency room and later on tested positive for HIV. Another mortality was an 18-year old male who was HIV-positive for 2 years before he received antiretroviral treatment. He succumbed to AIDS 6 months later. The third mortality in 2016 was an 8-year old male infected through vertical transmission. There were no deaths among the 8 cases enrolled in 2017. An 8-month old male was also infected via mother-to-child transmission and was a mortality in 2018.

Table 7: Yearly outcome of pediatric HIV

Year	Total Number of Cases (N)	Living		Died		Lost to follow up	
		N	%	N	%	N	%
2013	3	2	66	1	33	0	0
2014	1	1	100	0	0	0	0
2015	0	0	0	0	0	0	0
2016	9	3	33	3	33	3	33
2017	8	8	100	0	0	0	0
2018	9	8	88	1	12	0	0

Figure 3 shows the outcome of patients at 1 month, 1 year and ≥2 years after diagnosis. Out of 30 patients, 4 (13%) children died and 3 (10%) children were lost to follow-up within one month after diagnosis. At 1 year of follow-up, mortality rate increased to 23% as 5 patients died. Only 13 of the total number of patients had records pertaining to their outcome after 2 years. At this time, more patients (62%) had unfavorable outcomes.

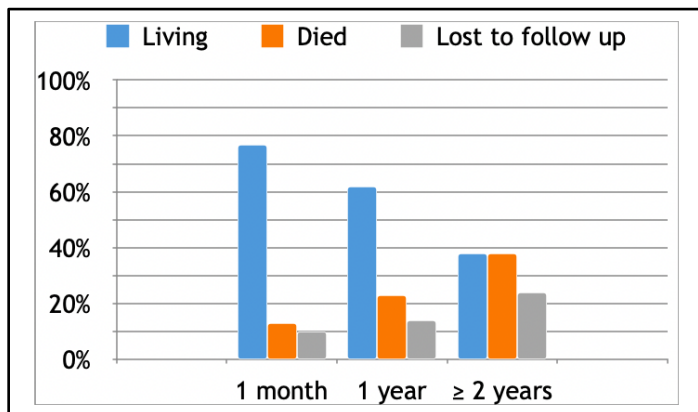


Figure 3: Outcome of pediatric HIV at 1 month, 1 year and ≥ 2 years after diagnosis

Two out of three children below 12 years of age died 1 month after diagnosis. For older children (12-18 years old), 33% had unfavorable outcomes at 1 month, 29% died or were lost to follow up after 1 year and majority (60%) had an unfavorable outcome after ≥ 2 years. The results showed that age was not significantly associated with outcome (Table 8).

Table 8: Association of age and outcome of pediatric HIV

Age	Living	Died or Lost to follow up	p- value
1 MONTH AFTER DIAGNOSIS (n=30)			
<12 years old	1	2	0.1190
12-18 years old (adolescent)	22	5	
1 YEAR AFTER DIAGNOSIS (n=21)			
<12 years old	1	2	0.7428
12-18 years old (adolescent)	12	6	
≥ 2 YEARS AFTER DIAGNOSIS (n=13)			
<12 years old	1	2	0.4895
12-18 years old (adolescent)	4	6	

Our study showed that 17% of children with CD4 count of <200 cells/uL died within 1 month after diagnosis. Similarly, 33% of patients with severe immunodeficiency (CD4 count < 200 cells/uL) died within one year after diagnosis. Only 10 children had baseline CD4 counts and at least 2 years of follow-up. Of this, seven children had a CD4 count below 200 cells/uL and 4 (57%) of them had poor outcome

(either died or lost to follow-up). All children with CD4 count of at least 200 cells/uL were still alive after 1 month, 1 year and ≥ 2 years of diagnosis. Despite these, our study showed that CD4 count is not significantly associated with outcome of pediatric HIV as shown in Table 9.

Table 9: Association of baseline CD4 count and outcome of pediatric HIV

Baseline CD4 Count	Living	Died or Lost to follow up	p- value
1 MONTH AFTER DIAGNOSIS (n=25)			
≥200 cells/uL	7	0	0.3548
<200 cells/uL	15	3	
1 YEAR AFTER DIAGNOSIS (n=18)			
≥200 cells/uL	6	0	0.1618
<200 cells/uL	8	4	
2 YEARS AFTER DIAGNOSIS (n=10)			
≥200 cells/uL	3	0	0.1667
<200 cells/uL	3	4	

DISCUSSION

The Philippines is suffering from an explosive HIV epidemic despite improvements in the overall global data on HIV.⁴ Since the first HIV case in 1984, the country has seen changing trends in the socio-demographic characteristics and clinical profile of affected patients.

Based on available data, the period prevalence of pediatric HIV in Western Visayas is 2.2%. This value is lower compared to the national prevalence of 4% reported in the HIV/AIDS and ART Registry of the Philippines (HARP) released last August 2018.⁵ Similarly, this is lower than the UNAIDS 2018 data which showed a global prevalence of pediatric HIV at 5%.

From 2016 to 2018, this study noted a disconcerting number of new pediatric HIV infections. From only 3 cases in 2013, the periods 2016 to 2018 showed a 200% increase, with 8-9 new cases diagnosed annually. This confirms the UNAIDS 2018 warning that the Philippines has the fastest-growing HIV rates in the Asia-Pacific region with a 141 percent increase from 2010 to 2016.⁶

These figures are also in parallel with the latest data recorded by HARP which reported an exponential growth of new HIV cases from an average of one case per day in 2008 to an alarming 31 new cases daily. The growing rates may be partly attributed to the Department of Health's (DOH) heightened drive for HIV testing.⁷ These numbers should not be taken for granted and other contributing factors should be considered. Results of the 2015 Integrated HIV Behavioral and Serologic Surveillance (IHBS) reveal that majority of key affected populations such as men who have sex with men (MSM), persons who inject drugs (PWID) and female sex workers (FSW) have limited knowledge on HIV transmission, HIV status and access to HIV support.⁸ Another possible explanation for this rising trend is a genotype shift in locally transmitted infections. Recent scientific findings by the National Institutes of Health (NIH) last April 2018 suggest that from the common HIV subtype B, new cases were seen to be caused by a more aggressive and easily transmissible subtype AE.⁹

Review of the socio-demographic profile of pediatric HIV patients in this study revealed that majority (97%) are males consistent with the August 2018 HARP report. Other studies on pediatric HIV conducted in India, Zimbabwe and Nepal also reported a predominance of male patients.¹⁰⁻¹⁵

Majority of pediatric HIV patients enrolled in WVMC Treatment Hub were adolescents. Indeed, HIV in the Philippines has become a youth epidemic.¹⁶ There were 57 newly diagnosed adolescents aged 10-19 years old in August 2018 alone, accounting for 5% of the total number of new cases. Furthermore, overall HARP data reported that 94% (2,241 out of 2,389) of all pediatric HIV cases were adolescents 10 to 19 years old. Worldwide HIV statistics also documented a similar pattern. In 2017, the UNAIDS emphasized that young people aged 15 to 24 years old have been at the forefront of the HIV/AIDS pandemic, reporting a 170% increase in the number of new HIV infections among this age group.¹

In this study, majority of infections were acquired through sexual transmission and all of HIV-positive adolescents were men who have sex with men (MSM). This finding is consistent with HARP August 2018 data which revealed that all of 57 newly diagnosed adolescents were infected through sexual transmission. Although male to male sexual contact is also the leading mode of infection in 70% of cases recorded by HARP, other forms of sexual contact (heterosexual and bisexual) were responsible for the remaining infections.⁵

The alarming increase in new HIV cases seen in this study is proportionate to the doubling HIV prevalence particularly among adolescent males/trans-genders who have sex with males (M/TSM) in the past five years.¹⁷ Furthermore, there are more young people who engage in sex but have limited access to adequate sex education and contraceptive services – a reality faced by countries in the Asia-Pacific, including the Philippines.¹⁸ Findings from the 2015 Integrated HIV Behavioral and Serologic Surveillance (IHBS) showed that most key affected populations such as MSM start their high-risk behaviors during the adolescent years.⁸ A study conducted by the Philippine National AIDS Council (PNAC) in 2017 revealed that a two to three year gap from unprotected coitarche to first contraceptive use has become a major factor to the rising spread of HIV among the youth.¹⁹

In contrast to studies conducted among pediatric patients in other HIV-plagued countries in Asia and Africa which still showed a predominance of mother-to-child (MTC) transmission, this mode of infection accounted for only 3 (10%) cases in this study.^{10-13,15,20,21} All of these children belonged to the younger age group (<12 years old) and were diagnosed at 8 months old, 4 years old and 8 years old, respectively with an average age at diagnosis of 4.2 years old. This data is consistent with other pediatric HIV studies which documented that the average age of diagnosis in most perinatally transmitted infections is before 5 years old.¹¹⁻¹³ According to HARP, a total of 13 children below 15 years old were reported to have been infected through mother-to-child transmission in 2018.⁵

Over-all Philippine data on MTC show a decreasing trend due to effective maternal intervention programs and improved access to ART. Recent data show that MTC accounts for only 6% of all pediatric HIV cases.³ This study recorded one new pediatric HIV case in 2018, suggesting that vertical transmission remains to be an important contributor to the spread of HIV.

The proximity of the WVMC-HACT Treatment Hub to patients residing in Iloilo City and nearby towns explains the distribution of enrolled patients according to location. However, this study did not include those patients registered in other HIV treatment centers in the region. The WVMC-HACT Treatment Hub is one of five DOH designated HIV Treatment Hubs in Region VI. Despite availability of these HIV care facilities, there is an ongoing challenge to provide young people who are at risk for HIV adequate access to HIV testing and intervention.¹⁷

Data on clinical symptomatology of pediatric HIV were consistent with findings from similar studies.^{13,22-27} More than half of patients (73%) in this study already had signs and symptoms during the first consult similar to results obtained by Ramaswamy et al. and Poudel et al., which reported that 78% and 80% of enrolled children were symptomatic upon diagnosis.^{13,22}

Most of the symptoms noted in this study were non-specific, like cough and flu-like symptoms, fever, vomiting and body malaise. Common presenting signs included lymphadenopathy, rashes, weight loss and oral ulcers. Pol et al. reported symptoms that were very similar to the ones obtained in this study such as persistent fever (70.42%), persistent cough (59.15%), loss of appetite (59.15%) and weight loss (56.33%).²⁵ Fever was noted in separate studies done by Lodha et al. (73.6%), Rajasekaran et al. (36.6%) and Poudel et al.^{12,13,24} Lymphadenopathy was a prominent clinical finding in many pediatric HIV studies.^{11,22,24} Protein energy malnutrition as a clinical manifestation was not observed in this study due to the lack of nutritional and anthropometric data in the medical records. This is significant to note because several studies showed that failure to

thrive, poor nutritional status and malnutrition were common presenting features in most patients.^{10,12,22} Other findings seen in previous studies that were not observed in the current study include recurrent diarrhea, anemia and hepatosplenomegaly.

Tuberculosis and pneumonia were the top HIV-related conditions seen among patients in this study and these are comparable to those documented in the literature.^{10,13, 22,28,29} Ramaswamy et al. reported tuberculosis (all forms of TB) in 25% of patients, while Shah et al. observed tuberculosis in 35%, candidiasis in 11% and *Pneumocystis carinii* pneumonia in 7%.^{10,22} Likewise, an investigation on pediatric HIV in Nepal noted the following co-infections: tuberculosis (16%), bacterial pneumonia (9.3%) and oropharyngeal candidiasis (6.7%).¹³

CD4 count determination is useful in classifying pediatric patients in terms of category of immunodeficiency.³⁰ In this study, baseline values showed that most (60%) patients had an actual CD4 count of less than 200 cells/uL which classified these children as having severe immunodeficiency. This result is much greater than the findings of Ramaswamy et al. in 2017 which reported only 5% of pediatric patients having severe immunodeficiency (CD4 count range: 11-227 cells/uL). The same study correlated clinical profile with CD4 count, and noted that children with opportunistic infections have lower CD4 values compared to those without opportunistic infections.²²

The mortality rates of pediatric HIV patients observed in this study were as follows: 13% at 1 month, 23% at 1 year and 38% at 2 years follow up. Majority (80%) of patients who died were observed to have died immediately or within a month after diagnosis, signifying that these cases were picked up at a late stage. In terms of outcome, the 2-year mortality rate is higher at 38% as compared to figures obtained by Shah et al. with only 14% mortality after 22 months.¹⁰ Similarly, these rates are significantly higher when compared to the findings of Poudel et al. which noted zero mortality in a 3.5 year study among HIV-infected children receiving anti-retroviral therapy in Nepal.¹³ Lodha et al. reported different survival rates for those

receiving and not receiving antiretroviral therapy.¹² The high mortality noted in this study may be attributed to the following factors: small number of patients, late diagnosis, severe immunodeficiency with low CD4 counts, presence of HIV-related infections and delayed or poor access to ART.

Although raw data would suggest that older patients tend to have poorer outcomes as compared to younger children, this was not statistically significant. Likewise, there was no significant relationship between baseline CD4 count and survival despite numbers suggesting that more patients with CD4 count of <200 cells/uL have died. There may be a limitation in determining the actual relationship between these factors due to unavailability of baseline CD4 count in several patients and the small number of patients involved.

CONCLUSION AND RECOMMENDATIONS

In conclusion, pediatric HIV patients in Western Visayas consist mostly of symptomatic male adolescents who engage in male to male sexual contact. Mother-to-child transmission accounted for a small percentage of cases. Most cases had severe immunodeficiency, and tuberculosis and pneumonia were common HIV-related conditions. Most patients died within a month after diagnosis and the 2-year survival rate was lower as compared to other studies done on pediatric HIV. There was no correlation between age and baseline CD4 count and outcome.

Results from this study may be utilized as baseline information for future studies on pediatric HIV patients, particularly among male adolescents. This subpopulation appears to have the highest risk and significant contributing factors require further investigation. Likewise, there is a need to fully evaluate other parameters such as socio-economic, sexual and behavioral epidemiology of young people living with HIV.

Data obtained from this study may be used to help improve HIV/AIDS prevention, treatment and monitoring in Western Visayas Medical Center. Significant results from this study may be beneficial in establishing local health programs and national government policies to specifically target key affected groups (adolescents, MSM, FSW).

A prospective cohort study on pediatric HIV is recommended. This study may include HIV genotype determination, natural history and presentation, course of disease and complications on follow-up, as well as CD4 count monitoring and clinical response to antiretroviral drugs. This would provide a more accurate and comprehensive correlation between different factors and outcome of patients. Data from other treatment centers in the region should also be included in future studies to provide a more representative profile of pediatric HIV in Western Visayas, Philippines.

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