

FACTORS INFLUENCING TIME TO DIAGNOSIS OF PAEDIATRIC CANCER PATIENTS AT MUHIMBILI NATIONAL HOSPITAL, DAR ES SALAAM, TANZANIA

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ABSTRACT

Background: Childhood cancer is the sixth leading cause of total cancer burden globally and the ninth leading cause of childhood disease burden globally. Timely recognition, diagnosis and treatment are important strategies in managing children with cancer and ultimately have a positive impact on the quality of life (QoL). Although there are many published studies on the time to diagnosis in cancer in the developed world, there are few published studies that have been conducted in the developing world. In particular Tanzania.

Objective: To determine the factors influencing time to diagnosis of paediatric cancer patients at Muhimbili National Hospital, Dar es Salaam, Tanzania.

Materials and methods: A hospital-based cross-sectional analytical study was conducted between June and August 2022. Data was collected using a pre-validated interviewer-administered structured questionnaire. Continuous data was summarised using median (with Inter Quartile Range) and categorical data was summarised using frequency and proportions. Data analysis on association between variables was done using Kruskal-Wallis/Mann-Whitney U tests. Evidence of statistical linear association was derived from assessment of significance of correlations between variables. Unless otherwise specified, a-level of 5% was used as limit of type I errors in findings. Written Informed consent was sought from each parent/guardian (with verbal assent for children > 7 years) prior to enrolment of the children into the study.

Results: During the study period a total of 172 children were enrolled. The median age was 6 (IQR: 3-10) years. Male: female =3:2. The diagnosis delay among the children was a median of 106 days (IQR: 53-247). The treatment delay was a median of 4 days (IQR: 1-10) and the total delay was a median of 108 days (IQR: 57-258).

The factors associated with diagnosis delay among children Included site of malignancy ($\chi^2=13.2$, $df=4$, p -value 0.01), the type of cancer ($\chi^2=50.4$, $df=11$, p value<0.001), diagnosis at the first facility ($\chi^2=12.8$, $df=1$, p -value 0.0004), seeking of alternative treatment ($\chi^2=26.8$, $df=1$, p -value<0.001) place of residence ($\chi^2=12.6$, $df=6$, p -value 0.04) as well as parent's/guardian's level of education ($\chi^2=10.6$, $df=3$, p -value 0.01). Epithelial tumours had the longest median diagnosis delay of 614 days (IQR: 289-1927) and hepatic tumours had the shortest median diagnosis delay of 38 days (IQR: 28 - 226). The first symptom with which the disease condition presented was also found to be associated with diagnosis delay ($\chi^2=28.323$, $df=16$, p -value 0.029).

Conclusion: There were overall profound diagnosis delays among different cancers in the study population. Cancer type, the primary site of malignancy, the diagnosis at the initial health facility, residence, level of education of the parent/guardian as well as seeking of alternative treatment was significantly associated with diagnosis delay.

Recommendations: There are several recommendations including: Community: Health promotion, education, and sensitization for awareness of signs and symptoms of cancer and early health seeking behavior. Healthcare providers: Campaigns for increased awareness of signs and symptoms of paediatrics cancers, and timely referral if diagnostics facilities are not available. Government: Embark on health system strengthening for early diagnosis, and immediate referral support for children suspected to have malignancy especially in Zanzibar as well as distribution of cancer diagnostic services at the lower levels.