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## ORIGINAL ARTICLE

### Precise Pediatric Cancer Diagnosis Using Immunohistochemistry: Reducing Cost of Care and Improving Outcomes in a Low and Middle-Income Setting

*Diagnostic Précis Des Cancers Pédiatriques Par Immunohistochimie: Réduction Du Coût Des Soins Et Amélioration Des Résultats Dans Un Contexte À Revenu Faible Et Intermédiaire*

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#### ABSTRACT

Childhood cancer is a significant cause of morbidity and mortality worldwide. It is the second-leading cause of non-communicable deaths among children worldwide with more than 90% of childhood cancer-associated mortality occurring in low-income and middle-income countries. Disparity in mortality rates has been linked to late presentation, inaccurate diagnosis, treatment abandonment and poor access to appropriate therapy.

Access to enhanced diagnostics such as immunohistochemistry (IHC) is vital for proper diagnosis and prompt institution of appropriate treatment for children with cancers. However, despite the ever-increasing insight into the use of these techniques for timely and accurate diagnosis of pediatric cancers; simple histological diagnosis remains the mainstay in most of the LMIC owing to financial constraints, unavailability of facilities and skilled manpower. Limited access results in imprecise diagnosis including missed diagnosis, misdiagnosis, and wrong diagnosis, subsequently resulting in increased cost of care and poor treatment outcomes.

This article focuses on the benefits of precise diagnosis among children who presented with cancers in an LMIC and the observed reduction in the cost of care, length of hospital stay, and improved outcome in the observed cohort as well as how to improve and promote access. WAJM 2023; 40 (12): 1341 - 1346

**KEYWORDS:** Pediatrics, children, Immunohistochemistry, Cancer.

#### RÉSUMÉ

Le cancer infantile est une cause significative de morbidité et de mortalité dans le monde. Il s'agit de la deuxième cause de décès non transmissible chez les enfants dans le monde, avec plus de 90 % de la mortalité associée au cancer infantile survenant dans les pays à revenu faible et intermédiaire. La disparité des taux de mortalité a été associée à une présentation tardive, un diagnostic inexact, l'abandon du traitement et un accès insuffisant à une thérapie appropriée.

L'accès à des diagnostics améliorés tels que l'immunohistochimie (IHC) est essentiel pour un diagnostic précis et la mise en place rapide d'un traitement approprié pour les enfants atteints de cancers. Cependant, malgré les connaissances de plus en plus approfondies sur l'utilisation de ces techniques pour un diagnostic rapide et précis des cancers pédiatriques, le diagnostic histologique simple reste le pilier dans la plupart des pays à revenu faible et intermédiaire en raison de contraintes financières, de l'indisponibilité des installations et du manque de personnel qualifié. Un accès limité se traduit par un diagnostic imprécis, notamment des diagnostics manqués, des erreurs de diagnostic et des diagnostics erronés, entraînant par la suite une augmentation du coût des soins et de mauvais résultats thérapeutiques.

Cet article met l'accent sur les avantages d'un diagnostic précis chez les enfants présentant des cancers dans un pays à revenu faible et intermédiaire, et sur la réduction observée du coût des soins, de la durée du séjour à l'hôpital, ainsi que sur l'amélioration des résultats dans la cohorte observée, ainsi que sur la manière d'améliorer et de promouvoir l'accès.

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**MOTS-CLÉS:** Pédiatrie, enfants, Immunohistochimie, Cancer

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