

Dedication

I dedicate this research to

My Parents and My Uncle whom showed me how to
dream

And to achieve my dreams

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My brothers and sisters....

For their support and kindness

My friends and my colleagues.....

The persons whom I love, respect and
appreciate.....

&

Everyone from whom I learned...

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Shakir Idris

ملخص الأطروحة

هذه دراسة اختبارية ضبطية أجريت في المركز القومي للعلاج بالاشعة والطب النووي بالخرطوم في الفترة من نوفمبر 2008 – يوليو 2009. هدفت هذه الدراسة للتحقق من فيروس ايبشتاين بار لدى الأطفال المصابين بسرطان الدم الذين راجعوا المركز القومي للعلاج بالاشعة والطب النووي بالخرطوم. فيروس ايبشتاين بار تم التحقق منه في 100 طفل أعمارهم بين 1 و 15 سنة (80 منهم مرضى بسرطان الدم و 20 بصحة جيدة). الحامض النووي الرايبوزي تم استخلاصه من عينات الدم ثم طبق تفاعل البلمرة التسلسلي للتحقق من فيروس ايبشتاين بار باستعمال ال ام بي ون برايمر. في مجموع 80 حالة سرطان دم، فيروس ايبشتاين بار تم التعرف عليه لدى 29 (36,25%) (58,6% من المرضى كانوا ذكوراً و 41,4% كانوا إناثاً)، لدى الأطفال المصابين بفيروس ايبشتاين بار، 22 (76%) تم تشخيصهم كسرطان دم ليمفاوي حاد، و 5 (17,2%) كسرطان دم نخاعي حاد، و 1 (3,4%) كسرطان دم ليمفاوي مزمن، و 1 (3,4%) كسرطان دم نخاعي حاد. تتوزع الإصابات بفيروس ايبشتاين بار وفقاً لإقامة المرضى كالتالي: 13 طفل مصاب بفيروس ايبشتاين بار من ولاية الخرطوم، 5 من وسط السودان، 2 من الغرب، 6 من الشرق، و 3 أطفال من شمال السودان. في المقابل، كانت نتيجة الكشف سلبية لفيروس ايبشتاين بار في 20 طفل من الخرطوم، 20 من وسط السودان، 12 من الغرب، 7 من الشرق، 11 من الشمال و 1 من جنوب السودان. أخيراً، البيانات العلمية المنشورة استمرت تقترح أن الإصابة بفيروس ايبشتاين بار تلعب دوراً مهماً في تطور سرطان الدم لدى الأطفال و من المحتمل أن تقترن بعوامل خطيرة أخرى. الدراسة اوصت بعمل مسوحات أكثر لمجتمعات المرضى باستخدام التقنيات الجزيئية الأكثر تقدماً لتأكيد دور فيروس ايبشتاين بار في تطور سرطان الدم في السودان.

Abstract

This is a case of control study conducted in Radiation Isotope Centre-Khartoum during November 2008 - July 2009. The study aimed to investigate Epstein Barr Virus in leukemic children who were referred to the Radiation Isotope Centre Khartoum. Epstein Barr Virus (EBV) was investigated among 100 Children aged between 1 – 15 years (80 were leukemic patients and 20 were healthy children). The DNA was extracted from blood samples then Polymerase Chain Reaction (PCR) applied to investigate the EBV using LMP1 primer. In this study, from the 80 cases of patients suffering from leukaemia, EBV was identified among 29 (36.25%), 58.6% of the patients were males and 41.4% were females. Among EBV positive children, 22 (76%) were diagnosed as ALL, 5(17.2%) AML, 1 (3.4%) CLL and (3.4%) CML. The EBV was distributed according to the patient's residency as follows; 13 EBV positive Children were from Khartoum, 5 were from the Centre of Sudan, 2 were from the West, 6 were from the East and 3 children were from the North of Sudan. In contrast, 20 EBV negative Children were from Khartoum, 20 were from the Centre of Sudan, 12 were from the West, and 7 were from the East, 11 were from the North and 1 from the South of Sudan. Eventually, the existing scientific data continue to suggest that infection of EBV plays a critical role in the development of childhood leukaemias, perhaps in conjunction with other risk factors. The study recommended screening more patients who suffer from leukaemia using more advanced molecular techniques to confirm the role of the EBV in developing of leukaemia in Sudan.