بررسی عناصر کم‌قیمت سرمگی نسبت به سرطان پستان

مقدمه:

در زمینه سرمگی، افزایش نسبت سرطان پستان و کم‌قیمت سرمگی در بیماران مبتلا به سرطان پستان و...

خلاصه:

نتیجه‌گیری: 

واژگان کلیدی: 

زینب کیبیر نتایج زاکهد، امیدرضا کاکویی، محسن صالح کرمانی، حسین چنگیزی، و حیدر اللہی پور...
Investigation of toxic and non-toxic hair trace elements in patients with breast cancer and benign breast diseases

Kabiri Z\textsuperscript{1,*}, Gholizadeh N\textsuperscript{1}, Kakuee O\textsuperscript{1}, Changizi V\textsuperscript{3}, Fathollahi V\textsuperscript{2}, Oliaiy P\textsuperscript{2}, Omranipour R\textsuperscript{4}

\textsuperscript{1} Department of Physics, Faculty of Science, K.N. Toosi University of Technology, Tehran, I. R. Iran.  
\textsuperscript{2} Department of Physics, Nuclear Science Research School, Tehran, I. R. Iran.  
\textsuperscript{3} Department of Radiology, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, I. R. Iran.  
\textsuperscript{4} Department of Surgery, Faculty of Medicine, Tehran University of Medical Sciences, Tehran, I. R. Iran.  
\textsuperscript{* Corresponding Author:} zeynakabiri2009@gmail.com

Abstract:

Background: Trace elements are essential for all life forms and play a vital role in human nutrition and biochemical functions. Epidemiologic studies suggest that trace element deficiency may be associated with increased risk of cancer.

Materials and Methods: In this study, the levels of a number of the elements in scalp hair samples of 81 people (21 breast cancer patients, 50 people suffering from benign breast diseases and 10 healthy individuals) were measured by a PIXE analysis. Pellets of hair samples were prepared and bombarded by 2.2 MeV proton beam of a 3 MV Van de Graaff accelerator.

Results: The concentrations of S, Cl, K, Ca, Fe and Cu in the hair of healthy individuals are in agreement with those observed in the hair of the benign breast disease and cancer patients within the standard deviations. There was a significant decrease in the mean total of Zn in scalp hair samples of the cancer patients compared to the control group. The average scalp hair concentrations of Pb, Br were higher in the benign breast disease and cancer patients than the healthy control.

Conclusion: If the deficiency or excess of a particular trace element can be linked to the cancer of an organ, such studies can be initiated to see whether controlled administering of that elements would check the growth of cancer, which ultimately can pave the way for developing a new drug to be used in chemotherapy for cancer.

Keywords: PIXE, Breast cancer, Trace elements