Age and Insulin levels in breast cancer women and healthy women

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Introduction

• Breast cancer is a common type of cancers among women; it is a heterogeneous disease lead to cause morbidity and mortality.

• Insulin release has reported to decrease with increasing age. However, age is considering the strongest risk factor for breast cancer after gender.

• Aim of this study to determine the age and serum insulin levels in breast cancer women and healthy women among Sudanese subjects.
Results I

- 130 newly diagnosed breast cancer women selected randomly in age range between 20 and 80 years
- 109 normal women in same age range were selected as control
- From the questionnaire breast cancer patients were lack physical activity and low nutrients intake.

Figure 1: Insulin concentrations in health women.
Results II

• In breast cancer patients, the elevation of insulin levels observed in age group of (20-29) years and decline seem to be constant in age groups of (30-39), (40-49) and (50-59) years and then decline.

• In health women, serum insulin levels elevated gradually in age groups of (30-39), (40-49) and (50-59) years, and then decline as explain in figure 2.

• Insulin normal value is 4 – 16.8 mIU/L

Figure 2: Insulin levels and age groups in study population
Discussion/conclusions

• These results do not support that high serum insulin level is directly associated with breast cancer; further studies need to clarify whether cases of high insulin levels enhance cell proliferation and associated to breast cancer etiology.

• Insulin levels are lower in older women, suggesting beta-cell dysfunction. Constant of insulin levels in age range between 30-59 years in newly diagnosed breast cancer that may link positively to hypoxia, and then after therapy the concentrations of insulin in blood circulation may increase significantly with acute hypoxia. Future studies recommended to explain the association between hyperinsulinemia and hypoxia interMediated with nutrient agents like trace elements, especially those that affect insulin levels as chromium, zinc, copper and selenium, besides other minerals like iron.

• Pharmacology should consider for hyperinsulinemia to improve outcome of radiotherapy for breast cancer patients, and to protect the women having high insulin levels from breast cancer development. Several factors may increase breast cancer risk by affecting insulin levels combined to lifestyle factors include lacking physical activity and poor nutrition. It is important to care with health in all ages of life.