

# Serum ferritin in newly diagnosed breast cancer and apparently healthy individuals

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## Abstract:

**BACKGROUND:** Iron is an essential element for the cell proliferation and is primarily stored in human body in the form of ferritin. Iron metabolism is influenced by oestrogen and interactions between iron and oestrogen is thought to synergistically promote breast cancer (BC). **OBJECTIVES:** To assess serum ferritin concentrations of BC patients and healthy females. **METHODS:** Newly diagnosed BC patients (n=150) and apparently healthy females (n=75) who consented to be on the study were enrolled. Serum ferritin concentration was assessed using enzyme immunoassay method using mini vidas immune analyser. **RESULTS:** Median serum ferritin concentrations (IQR) of pre (n=58) and postmenopausal (n=92) BC patients were 32.32 (37.84) ng/ml and 64.33 (27.18) ng/ml respectively. Postmenopausal BC patients had significantly high ( $p<0.05$ ) serum ferritin concentrations compared to premenopausal BC patients. Apparently healthy pre (n=35) and postmenopausal (n=40) women had median values of 26.06(28.09) ng/ml and 45.00(51.24) ng/ml respectively the difference of which was statistically significant ( $p<0.05$ ). A significant difference in serum ferritin concentration was not observed among premenopausal BC women and apparently healthy women ( $p>0.05$ ). However, postmenopausal BC women had significant high levels of serum ferritin compared to postmenopausal healthy women ( $p<0.05$ ). The postmenopausal ferritin concentrations among BC and normal women studied via ROC curve showed 70% ( $p=0.000$ , CI 0.62-0.79) of area under the curve with ferritin cutoff value of 58 ng/mL with 60% sensitivity and 75% specificity. Among postmenopausal BC and healthy women, 56.5% and 29% had ferritin levels above this cutoff value respectively and postmenopausal women having ferritin levels above the cutoff had 3times (OR=3.1, 95%CI 1.6-5.9) risk of having breast cancer. **CONCLUSIONS:** Elevated serum ferritin concentration in postmenopausal women is associated with breast cancer risk but not in premenopausal women.

## Description:

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