

Expanding Waist Size Increases Breast Abnormalities



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Introduction

The rapid increase in breast cancer incidence calls for active preventive efforts. Several risk factors for breast cancer have been identified, many of which are related to prolonged exposure to estrogen¹. Bone Mineral Density (BMD) is a lifetime marker of estrogen in a woman's body and has been associated with increased breast cancer risk².

Body Mass Index (BMI) is a combination of the height and weight to reflect the body size and it has been proven that increased BMI is related to the increased breast cancer risk³.

Aim

The aim of the study is to identify the association between BMI, BMD, and abnormal mammogram findings among UAE female citizens.

Methods and Materials

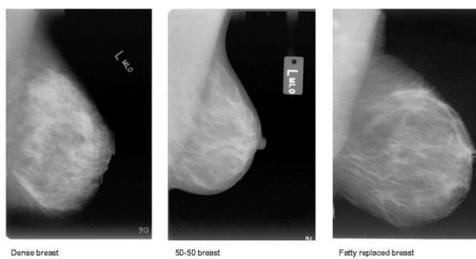


Image 1: mammograms showing different breast types



Image 2: DEXA scanner



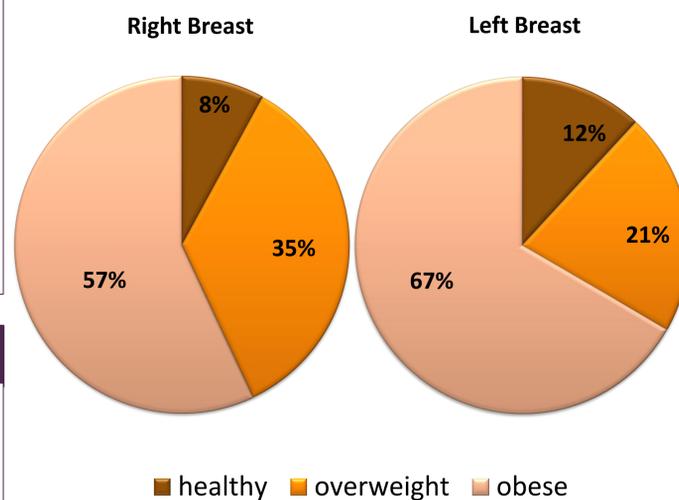
Image 3: weight scale.

A cross-sectional, retrospective study conducted in 2019 and data was collected from University Hospital in Sharjah. UAE female citizens aged 35 years and older who had abnormal mammogram results and underwent DEXA scan during 2016-2018 were included in the study. In addition, the BMI was calculated for all patients from their height and weight.

Mammogram reports were divided into right and left BIRAD categories, since some patients had different scores in each breast, so it was not possible to include both scores in one category. data collection was done after receiving the ethical approval from the ethical committee of UHS. The data collected was analyzed using SPSS 25.0.0.0.

Results

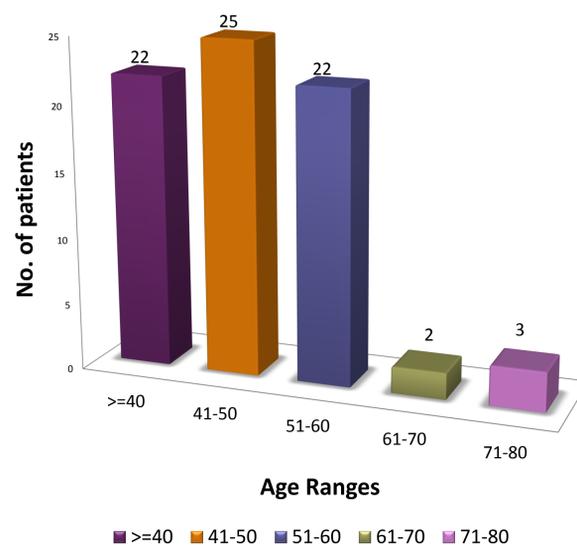
Breast Abnormalities VS BMI



■ healthy ■ overweight ■ obese

| | | BMD | | | |
|--------------|---|--------|-----------------|------------|--------------|
| BI-RADS | | Normal | Mild osteopenia | osteopenia | osteoporosis |
| Right BI-RAD | 1 | 9.09% | 0% | 9.09% | 0% |
| | 2 | 9.09% | 9.09% | 0% | 0% |
| | 3 | 0% | 0% | 0% | 9.09% |
| | 4 | 0% | 0% | 0% | 9.09% |
| Left BI-RAD | 1 | 0% | 0% | 9.09% | 0% |
| | 2 | 18.19% | 9.09% | 0% | 9.09% |

Age Range VS BMI



Discussion

When comparing the mammogram results with the BMI, greatest number of patients turned out to be in the obese category of both sides, the left and right BIRADS making a 56.7% in the right, and 66.6% in the left which gives an indication that the higher the BMI, the greater the risk of having abnormal BIRADS.

Moving to the comparison between BMD and BIRAD scores. Two patients were found to have osteoporosis. Moreover, one patient was diagnosed with osteoporosis the left side.

The number of patients who had denser bones (normal BMD scores) is larger than the patients with osteoporosis, which indicates that higher bone density would be related to the higher risk of breast diseases, since all the patients in this study were known to have breast problems.

The greatest proportion of individuals whom had abnormal BIRAD scores turned out to be in the age range of 51 and 60.

Conclusions

The incidence of breast cancer arises with the increase in the BMI and BMD. BMI is an important risk factor, it would increase the abnormal mammogram results. Maintaining a lean body mass provides a way for women to modestly reduce their relative risk of breast cancer significantly. In addition, DEXA scan can be advantageous by calculating the BMI easily. Further prospective studies with a large sample size are required to prove the relation between BMD and abnormal mammogram results in UAE.

Acknowledgment

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