

## EDITORIAL

# BREAST CANCER: CORRELATION BETWEEN VITAMIN D, MAMMOGRAPHIC DENSITY AND BREAST CANCER RISK IN PAKISTAN.

Bushra Wasim<sup>1</sup>

<sup>1</sup>Department of Anatomy, Ziauddin University, Karachi

Pakistan comes under the category of countries with significant cancer load and surprisingly rising trends of risk factors. Amongst all the cancers, Breast cancer takes the lead. It has been reported to be accountable for one third of the cancers in the females. An alarming rise in the incidence has been seen in the last five years and the incidence rates are close to the highest risk regions of the world<sup>1</sup>. In the list of risk factors we have modifiable and non-modifiable risk factors. Women in the western world have a 1 in 8 chance (12.5%) of developing breast cancer. If you have a family history of breast cancer from the maternal side, the life time risk becomes 17-30%. Women with BRCA 1&2 gene mutation have a life time risk of 60-90%<sup>2</sup>.

Among the modifiable risk factors Vitamin D and Mammographic density take the lead and since both are interrelated the direction of research has been towards these two important aspects for quite some time now. Vitamin D is a steroid hormone that exerts its effect via a vitamin D receptor and also acts independently, this has been proved by the anti-proliferative effects of vitamin D in MCF-7 cells<sup>3</sup>. Breast cells have VDRs in their nuclei, cytoplasm and cell membrane and it has been inferred that several genes like *folk1*, *appa1*, *bsm1*, *taq1* contain vitamin D response elements which are important<sup>4</sup>.

Mammographic density on the other hand is also a strong predictor of breast cancer in premenopausal women<sup>5</sup>. MD refers to the amount of epithelial cells and connective tissue in the breasts which are radio dense and appear light on film screen mammogram. In the past methods for reading mammographic density was subjective and qualitative but thanks to digital mammography and advancements in 3D volumetric breast density assessment detection of early stage breast cancer has become much easier and more objective and quantitative.

I would like to conclude by suggesting that all those risk factors which are modifiable should be looked into and by individual effort all females should make an effort to do lifestyle modifications by indulging in regular exercise even a 20 minute walk daily is recommended, lose weight, stick to a healthy diet plan, avoid alcohol, keep their Vitamin D levels well above normal range by taking appropriate food and supplements and exposing to some amount of sunshine daily, in relevance to our cultural and religious norms to cover ourselves with black burqa's which is a strong reflector of ultra violet beta radiation. If they are not in the screening age which is 40yrs, do regular breast self examinations and consult a clinician once every six months. The revolution by this micronutrient i.e. Vitamin D or the sunshine miracle can be a safe and cost effective method for preventing breast cancer.

## REFERENCES

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