

However, in a small population in this pilot study we have seen good results in TMT-B, which means without impairment in executive function. This result is different in comparison with previous researches. The future examination with larger sample and with application of different cognitive tests, is highly recommended.

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POSTER

#### Toll Like Receptor 4 – Weapon or Shield – a Murine Breast Cancer Study

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**Background:** TLR4 is a member of a family of pattern recognition receptors that are involved in host defence against infection. Few studies established links between TLR4 and cancer. Thus far, studies have predominantly focused on the effect of TLR4 in cancer cells; however this study focuses on TLR4 in both the host immune system and cancer cells and its effect on breast cancer progression and metastasis.

**Materials and Methods:**  $3 \times 10^5$  murine mammary adenocarcinoma 4T1 cells and TLR4-knocking down 4T1 cells were inoculated into female wild-type (WT) and C.3-Tlr4<sup>LP8-d/J</sup> (TLR4<sup>-/-</sup>) mice by mammary fat pad injection and divided into a control and a primary tumour resection groups. Tumour growth, tumour body weight ratio, lung metastasis and survival of tumour bearing mice were assessed.

**Results:** There was a significant increase in tumour volume on the 2<sup>nd</sup>, 3<sup>rd</sup> and 4<sup>th</sup> week after inoculation of the TLR4<sup>-/-</sup> mice with 4T1 cells compared to WT mice ( $P < 0.05$ ). The numbers of metastatic lung nodules were significantly higher in the TLR4<sup>-/-</sup> mice ( $P < 0.05$ ). Survival of TLR4<sup>-/-</sup> mice was dramatically reduced compared to WT mice ( $P < 0.05$ ). Knock down of the TLR4 from 4T1 cells led to a synergistic increase in tumour volume and reduction in lung nodules ( $P < 0.001$ ).

**Conclusions:** TLR4 exerts a protective role in this murine metastatic breast tumour model at the host level and an adverse role at the cancer cell level. Further evaluation of the role of TLR4 in breast cancer is warranted.

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#### Association of Serum Level of 25 Hydroxy-vitamin D With Prognostic Factors of Breast Cancer

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**Background:** Experimental studies have shown that vitamin D promotes cell differentiation and retards or terminates proliferation of breast cancer cells. However, there is little evidence supporting the association of vitamin D and prognosis of breast cancer. This study aimed at evaluating possible association of serum 25 hydroxy-vitamin D with prognostic factors of breast cancer.

**Materials and Methods:** In this analytic-descriptive study, 119 female patients with histologically proven breast cancer were recruited in Tabriz oncology clinics in a 15-month period of time. Serum level of 25 hydroxy vitamin D (25(OH)D) was measured in all patients. Patients' demographics, stage and grade of cancer, status of lymph node involvement, metastasis, and biomarkers such as ER, PR, HER2, Ki-67 and P53 were documented.

**Results:** One hundred and nineteen patients with a mean age of  $50.4 \pm 12.6$  (26–76) years were enrolled in the study. The mean serum level of 25(OH)D was  $15.7 \pm 17.8$  (4–122) ng/ml, deficient in 66 cases, insufficient in 36 cases and normal level in 17 cases. The median level of 25(OH)D was lower in the P53+ group in a borderline trend (17.3 vs. 13.6 ng/ml;  $p = 0.07$ ). The median level of 25(OH)D was significantly higher in the patients with metastasis, as well (27.7 vs. 12.0 ng/ml;  $p = 0.03$ ). There was no significant association between the serum level of 25(OH)D and other studied parameters.

**Conclusions:** Based on our findings, there may be an association between the serum level of 25(OH)D and prognosis of breast cancer.

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POSTER

#### Association of Decreased NK Cell Activity and IFN $\gamma$ Expression With pSTAT Dysregulation in Breast Cancer Patients

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**Background:** Impaired IFN $\gamma$  production in peripheral blood lymphocytes (PBL) and their subsets reflects immunosuppression and inadequate antitumour immune response in cancer patients. Decreased function of natural killer (NK) cells has not been investigated in breast cancer with respect to altered pSTAT signaling pathways.

**Materials and Methods:** PBL of breast cancer patients and healthy controls were analyzed for IFN $\gamma$  and pSTAT1 expression and NK cell activity using flow cytometry and <sup>51</sup>Cr-release assay, respectively. The level of pSTAT1, 3 and 5 was investigated by Western blotting.

**Results:** Our results indicated that PBL and CD3<sup>+</sup>CD16<sup>+</sup> NK cells of patients had significantly lower level of IFN $\gamma$ . The patients had a significantly decreased NK cell cytotoxicity compared to controls, with the decrease being dependent on the stage of disease. Positive correlation between IFN $\gamma$  level in PBL and NK cytotoxicity in controls and patients was also shown. The PBL of patients, compared to controls, expressed lower level of pSTAT1, 3 and 5. The patients' T and NK cell subsets had lower pSTAT1 level.

**Conclusions:** This study indicates that pSTAT1 in PBL of breast cancer patients could be a biomarker of decreased NK cell cytotoxicity and IFN $\gamma$  level that are associated with progression of this disease.

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POSTER

#### The Beliefs, Knowledge, Understanding, Attitudes and Treatment Access to Breast Cancer Amongst Rural Women in Northern Nigeria

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**Goal:** The goal of this study is to ascertain the beliefs, knowledge, understanding, attitudes and treatment access to breast cancer among rural women in Nigeria.

**Background:** Breast cancer has become a popular topic in recent years with several thousands of women diagnosed to be positive every year. The availability of care/treatment upon early detection is key to survival.

**Methods:** An interview guide was designed specifically for this study in which 200 rural women in Northern Nigeria, age 45 and over took part in. It contained questions about beliefs, knowledge, understanding and attitudes about Breast Self-Examination (BSE), Clinical Breast Examination (CBE) and mammogram. In addition, questions assessing the variables of the Health Belief Model and health motivations also were included. The data were obtained during face-to-face interviews in the primary language of the participating woman. The interviews were transcribed and translated into English.

**Results:** Out of the 200 women who participated, only 1% two (2) of the participants practiced BSE monthly, 8% had undergone at least one CBE during their lives, and 91% had never had a mammogram. There were little or no access to treatment even at early detection in these rural areas causing thereby vulnerability to loss of life. Majority of these rural women (95%) said they knew little or nothing about breast cancer. While 15% of the women said detecting cancer early was important, only 3% reported that cancer could be cured. Age, education, or mother tongue showed no statistically significant relationship with the breast health practice scores. However, proficiency with the English language ( $p = 0.009$ ) and number of years exposed to awareness and education ( $p = 0.009$ ) had a significant relationship with the breast health practice scores. The significant explanatory factor for the variable breast health practices was a cue to action ( $p = 0.009$ ).

**Conclusions:** The level of awareness and treatment access to breast cancer amongst Northern Nigeria's rural women is extremely low thereby making them not to engage in screening and/or detection practices. This alarming situation calls for urgent intervention of medical/health organizations to provide immediate breast cancer awareness, screening and care so as to reduce incidences or threat at early detection.