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2nd World Congress on

Breast Cancer

&

Cancer Science and Therapy

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Scientific Tracks & Abstracts

30 YEARS OF EXCELLENCE IN MEDICAL PUBLISHING

High-risk Human papillomaviruses & Epstein–Barr Virus in breast cancer

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Breast cancer is the most frequent cause of cancer-related deaths among women worldwide; according to the World Health Organization more than 520,000 deaths have been attributed to breast cancer in 2018 (Global Health Estimates, WHO 2018). In fact, the majority of cancer deaths are the result of metastasis, either directly due to tumor involvement of critical organs or indirectly due to therapeutic resistance and the inability of available therapy to control tumor progression. It is estimated that 15-20% of human cancers are linked to virus infection including Epstein–Barr virus (EBV) and high-risk human papillomaviruses (HPVs). We have recently demonstrated that high-risk HPVs and EBV are present in the majority of invasive human breast cancer cases in Syrian women. In addition, we have established that E6/E7 onco–proteins of high-risk HPV type 16 convert non-invasive and non-metastatic breast cancer into invasive and metastatic phenotype; this was accompanied by an overexpression of Id-1 gene, which is an important regulator of cell invasion and metastasis. Furthermore, we showed that E6/E7 onco-proteins up-regulate Id-1 promoter activity in human breast cancer cells. On the other hand, it is important to mention that high-risk HPVs and EBV are the most studied oncoviruses in human breast cancer. In this presentation, I will discuss the presence and role of these viruses in human breast carcinogenesis and metastasis; especially, I will focus on the role of E6/E7 and LMP1 onco-proteins of high-risk HPV and EBV, respectively, which was largely explored by my group.

Biography

Ala-Eddin Al Moustafa has earned his B.Sc. from Aleppo University and his Master as well as PhD in Developmental Biology from the Institute of Embryology of the CNRS and Collège de France, and Paris XIII University. He completed his training as a postdoctoral fellow at McGill University. Al Moustafa established the first Cancer Research Centre in Aleppo-Syria and founded the Middle-Eastern Association for Cancer Research. He published more than eighty papers, in international journals, and book chapters. His main research focuses on the roles of several Oncogenes, gene cooperation and Onco-viruses, especially high-risk HPV and EBV in human carcinogenesis and metastasis. Al Moustafa joined the College of Medicine of Qatar University, as a Professor/Principal Investigator, where he established his cancer biology lab.

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Effects of overseas undergraduate clinical experience and service-learning opportunities

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Background: Breast cancer is the most common malignancy in females across the globe. Since breast tumour microenvironment is bathed with a range of immune infiltrates, it is a potential, but largely unfathomed, candidate for immunotherapy. However, exact mechanistic links between immune infiltrates and breast carcinogenesis are largely unclear. Moreover, leukocyte densities at various stages of breast tumourigenesis are largely understudied. In this study, we have investigated immune cell densities of leukocytes in breast cancer and correlated these with known prognostic factors.

Objective: To investigate the microenvironment of breast cancer and enumerate the number and type of cells and analyze their correlation with NPI and molecular sub-typing.

Methodology: A total of 208 tissues were analyzed (104 cases and 104 controls). Breast cancer tissues were classified using conventional histological sub-typing, molecular sub-typing (using α-ER, α-PgR and α-Her-2 antibodies) and NPI scoring. Quantification of immune cells/mm2 was performed using H&E (for neutrophils), special stains (Giemsa for macrophages and Toluidine blue for mast cells), α-CD3 antibodies (T-lymphocytes) and α-CD20 antibodies (B-lymphocytes). Data were entered and analyzed using SPSS version 16. Correlation of immune cell densities with prognostic indices was investigated using t-test and Fisher's exact test. A p-value of <0.05 was considered as significant.

Results: Our data demonstrate significantly increased infiltration of T-lymphocytes (p-value= 1.43×10-26), B-lymphocytes (p-value= 2.13×10-17), neutrophils (p-value = 4.53×10-08) and mast cell (p-value=1.20×10-10), in breast cancer tissue compared to controls. Moreover we demonstrate a significant association (p-value = 0.009) between tumour infiltrating CD3 T-lymphocytes and molecular sub-types of breast cancer i.e. luminal; A, B, Her2 overexpression and triple negative/basal like. Importantly, we report increased T-lymphocytes infiltration in worst prognostic groups i.e. Triple negative and luminal B. Our data also demonstrates that there is no significant association (p-value = >0.05) between NPI scoring and breast cancer associated immune cells (T-lymphocytes, B-lymphocytes, neutrophils, macrophages and mast cells).

Conclusion: We reported the conventional breast tumour classification system, based primarily on grading and NPI scores, is used routinely and has several advantages, is considerably limited in terms of identifying patients' prognosis and therapeutic options/outcomes. The increased infiltration of neutrophils, mast cells, T and B lymphocytes in breast tumour microenvironment compared to the controls and specially increase in worst prognostic groups i.e. triple negative/basal like and luminal B tumours is suggestive of their crucial role in breast tumourigenesis.

Biography

Bushra Sikander has completed M.Phil. (Histopathology), Dow University of Health & Sciences and. MBBS from Dow Medical College (2004-2009). She has been honored with many academic professional certificates. Assistant Professor, Department of Pathology, Dow University of Health and Sciences Pakistan. (Nov 2017 till date) With the research interest in Breast cancer, Tumor immunology, Tumor microenvironment, Damage Associated Molecular Patterns (DAMP), Cancer registry.

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New immunomodulatory targets and next generation active immune checkpoint control immunotherapy

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Challenges remain in expanding the target space, developing next-generation active immune immunotherapy with improved efficacy and safety. This presentation focuses the leading immunomodulatory pathways as well as therapeutic targets we have identified in B7 superfamily members: B7-H1 (PD-L1) B7-H2, B7-H3 and B7-H4, TNF ligands and receptor superfamily: Blys, DR3, DR4, DR5, DR6, GITR, GITRL, TR2, LIGHT, TR6, TL1A, RANK, TNFRSF19, RELT, TR1, DcR1and DcR2 Siglecs family: Siglec 5, 7, 8, 9, 10, 11,and Galectin family: Galectin 9,10, 11, 12. The abnormal expression of galectins is known to be linked to the development, progression and metastasis of cancers. tumor-derived galectins can have bifunctional effects on tumor and immune cells. This talk focuses on the biological effects of galectin-1, galectin-3 and galectin-9 in various cancers and discusses anticancer therapies that target these molecules. Siglecs comprise a family of 15 members of sialic acid-binding receptors. Many Siglecs function as inhibitory receptors on innate and adaptive immune cells and may contribute to the attenuation of immune responses to tumors. Siglecs are mostly inhibitory receptors similar to known immune checkpoints including PD-1 or CTLA-4 that are successfully targeted with blocking antibodies for cancer immunotherapy.

The next generation active immune checkpoint control immunotherapy which based on a Specific Total Immune Remodeler Platform demonstrate the ability to activate and use the full potential of the patient's own immune system to eradicate cancer and is able to induce the killing of tumor target expressing cells by simultaneously activating all possible immunological pathways (humoral and cellular), thus, succeed in controlling all the relevant immune checkpoints that prevent the immune system from attacking and defeating cancer.

Biography

Jian Ni obtained his M.D. from Second Military Medical University and Ph.D. from University of Cambridge. Ni was a Post-doctoral Fellow at the National Cancer Institute and University of California, Irvine. He is an American Society of Clinical pathologists board certified Specialist in Immunology. Ni was a Senior Scientist of Human Genome Sciences, Inc., and has many years of experience in biomedical research, immunology, oncology and protein chemistry, and industrial experience in functional genomics, therapeutic protein and antibodies discovery and development.

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An insider view of breast cancer treatment through the eyes of a cancer patient

Sylvie Leotin
USA

This session led by a patient entrepreneur will offer a rare opportunity for oncology providers and researchers to discover the unseen and unaddressed needs of cancer patients undergoing treatment. Sharing vignettes from her personal cancer experience, this patient will offer a revealing lens into the human experience of cancer patients, invisible to outside observers. Many oncology providers have not had cancer themselves, and as such, it is hard for them to fully understand the treatment experience. This session was designed to address that gap and help oncology providers appreciate what it's like to be in the gown of a cancer patient sitting inside a waiting room, walking into a radiation suite, and receiving breast cancer treatment. Through evocative language and imagery, the speaker will help the audience discover layers of the cancer experience they had not seen before, and gain new insights to improve patient treatment and outcomes.

Innovation in cancer research primarily focuses on reducing death rates. Understandably. Saving human lives is an essential medical goal. This session will bring to the forefront another imperative goal: the need for reducing patient suffering. To this date, the stress and pain induced by cancer treatment remains staggeringly high. Cutting edge technology and skilled providers save millions of lives, but the treatment process often leaves patients feeling shattered and dehumanized. This in turns can impair healing and hinder outcomes. By helping caregivers see the unseen needs of cancer patients this patient hopes to spark a vision for collective change and redesign of the cancer treatment experience.

Biography

Sylvie Leotin is a lone polymath in a highly-specialized world. A former gold medal ballerina and robotic scientist, I combine a highly-logical mind with deep perceptive skills. After 20 years of working in narrow jobs that used only a fraction of her skills, she got hit by cancer and suffered devastating losses.

she started to write her cancer journey, and, through the process, discovered a new voice she had never heard before. Her true authentic voice. Buried for so long. The voice of a person who has explored the depth of her own pain and can perceive the unarticulated pain of others. The voice of a person who can find beauty in every place and every day.

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Evaluation of the use of Autologous Fibrin Glue on Seroma Reduction after modified radical mastectomy in women with breast cancer

Sara Salem
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Introduction: Breast cancer is the second most common cancer in the world. It represents 35.1 % of total female cancer cases in Egypt. Seroma is one of the most serious and common complications of mastectomy, it delays wound healing and increases susceptibility to infection and skin flap necrosis. Use of fibrin glue was based on the hypothesis that fibrinolytic activity in serum and lymph might contribute to fluid accumulation.

Methods: Sixty patients were prepared for modified radical mastectomy. Of those, the study group contains 30patients and the control group contains 30 patients. Study group used the autologous fibrin glue with the drains , while the other had only the ; total drain outputs were recorded daily for all patients prior to drain removal. The drains were removed when the daily drainage was less than 30 ml for 3 consecutive days.

Results: This study contains 60 patients, the study group contains 30 patients, and the control group contains 30 patients. Age, pathology, number of lymph nodes and tumor size were of no significant differences to be more concise on the effect of fibrin glue. Comparison in median days to drain removal showed 8 days reduction in the study group. While in the total volume of drain output, patients using fibrin glue has significantly lower cumulative drain output volume with a mean of (505.6 ± 209.3) than those who didn't use it with a mean of (1674.1± 1373.8). Also comparison of the postoperative follow up days between the two groups shows that patients using fibrin glue after operation has significantly lower postoperative follow up(8.5 (7 - 10) than those who didn't use it compared with the group who didn't use fibrin glue15 (10- 23).

Conclusions: Fibrin glue usage is a valuable procedure that significantly decreases seroma post modified radical mastectomy.

Biography

Sara has completed her MD at the age of 28 years from Suez Canal University, Faculty of medicine, Egypt.

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Total laparoscopic middle rectal resection with transanal specimen extraction: A minimally invasive technique called Noses

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Objective: To evaluate the feasibility, safety and the short-term outcomes through technical aspects of the middle rectal resection followed by transanal specimen extraction.

Methods: Forty-four consecutive patients with rectal tumors underwent laparoscopic rectectomy followed by transanal specimen extraction over a period of two years. All the patients were satisfied with the inclusion criteria of this approach. Intraoperative data as well as short-term outcomes were evaluated respectively.

Results: The laparoscopic rectal resection followed by transanal specimen extraction was successfully carried out in all of the 44 patients without intraoperative conversion and additional access. The mean operation time was 182.7 min (range 130-255 min), the mean blood loss was 26.5 ml (range 5-120 ml), the mean postoperative exhaust time was 31.3 hours (range 16-60 hours), and the mean length of hospital stay was 9.5 days (range 8-19 days). One of the patients was detected with an anastomotic leakage postoperatively which was dealt with an antibiotic course and daily pelvic cavity flush. No infection-related complications and anal incontinence were observed. The mean size of the tumor was 2.1 cm (range from 1.6-3.2 cm), the mean number of harvested lymph nodes was 16.5 (range 6-31) and the mean follow-up time was 8.5 months (range 2-16 months). To the last follow-up, no signs of recurrence in any of these patients were found.

Conclusion: The combination of standard laparoscopic rectectomy and transanal specimen extraction could be a well-established strategy and may be considered as an alternative procedure to the conventional laparoscopic rectectomy.

Biography

Shan Muhammad has completed PhD in General Surgery recently under the supervision of Wang Xishan; who is a very well-known colorectal surgeon both nationally and internationally. He has published various colorectal cancer related studies. He has a good experience in both basic and clinical research. His team has come up with the novel developmental idea in NOSES for CRC, which has been successfully implemented and carried on in the CRC department of the 2nd hospital of HMU and many patients have been treated successfully. He is currently doing research in Western and Chinese medicine integration at the Heilongjiang University of Traditional Medicine, Harbin, China.

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