Samir A. Farghaly, J Cancer Sci Ther, 3:7
doi: http://dx.doi.org/10.4172/1948-5956.S1.16

OMICS Group Conferences
Accelerating Scientific Discovery

International Conference & Exhibition on
Cancer Science & Therapy
15-17 August 2011 Las Vegas, USA

The status of anti-metastatic gene therapy in patients with advanced epithelial ovarian cancer

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Ovarian cancer is the foremost cause of death from gynecological cancer in the developed world. In the USA 27,000 new cases of ovarian cancer, and 14,000 deaths are reported each year. About 80% of patients with ovarian cancer present with metastatic disease. The overall 5-year survival rate for women with cancer is 30%. The epithelial cells of the ovary constitute 1% of the total ovarian mass but constitute 90% of the ovarian neoplasms. Epithelial ovarian cancer (EOC) spreads initially by direct extensions into adjacent organs, especially the fallopian tubes, uterus, and contralteral adenexa and occasionally the rectum, bladder, and pelvic side wall . After direct extension, epithelial ovarian cancer frequently disseminates via transcoelmic route, with 70% of patients having peritoneal metastases at staging laparotomy. The correlation between molecular profiles and metastatic spread varies depending on tumor type and metastatic site and is combination of 2 models. First, tumors are genetically heterogeneous and that metastases arise from colones with a genetically acquired metastatic phenotype, and that the clonoal genotype determines the final site of metastases. The second model is that metastatic cells are not a genetically primary tumor, instead they arise as stochastic event, with a low but finite probability from tumor cell clones distinct from the primary tumor. Several cofactors , such as MMP-2/-9 inhibitor, TNF, lypmphotoxin a, Fas Ligand Fas L, APO3L, TRAIL, interleukin -8, and P38 MAPK regulating ovarian cancer cells attachment to omentum and /or peritoneum have been identified, and would have noticeable clinical inhibition of the metastatic process, by enabling the identification of cellular or molecular targets that therapeutically viable. That would be able to block the steps necessary for ovarian cancer metastasis within the peritoneal cavity.

Biography

Samir A. Farghaly is a physician / Scientist- faculty member at the Medical College of Cornell University, and the New York Presbyterian Hospital/ Cornell University Medical Center, New York, NY – USA. He received his M.D degree from University College, London University and his PhD degree in molecular biology from London University. He was affiliated with Columbia University College of Physicians and surgeons/ Columbia University medical center, New York, NY. He received several clinical and research awards. He has been an invited speaker in several national and international conferences on Women's health, Molecular genetic of female cancers, Gynecological cancer and Oncology. He is a member of several national and international societies, organizations, foundations of Women health and Cancer. He is an editor, member of editorial boards, editorial advisory boards and reviewers of several medical journals of Cancer Science & Therapy, Gynecology, Gynecological Cancer, Ovary Research, Genomics, Clinical & Experimental Obstetrics and Gynecology, and Oncology. He has published 78 articles in reputed peer review journals. He is an editor of a book on ovarian cancer (To be published in 2011).