

34th Euro-Global Summit on **Cancer Therapy & Radiation Oncology**
 &
 6th International Conference on **Big Data Analysis and Data Mining**
 &
 13th International Conference on **Orthopedics, Arthroplasty and Rheumatology**
 July 25-27, 2019 London, UK

Vitamin C as a possible adjunctive drug in ovarian cancer treatment

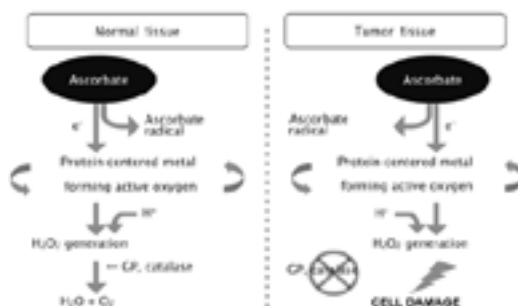
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Introduction: Despite rapid progress in understanding the etiology of epithelial ovarian cancer it is still the most lethal form of cancers. In Poland, ovarian cancer is the sixth most common women's cancer. Vitamin C (L-ascorbic acid) has been widely used in the treatment and prevention of cancer; nevertheless, the clinical results are still inconclusive. Still there are many controversies regarding the role of vitamin C in the prevention and treatment of cancer.

Study Design: In the present data we estimated dose dependent effect of VitC on SVCT1, involved in whole body vitamin C homeostasis, SVCT2, protects metabolically active cells from oxidative stress and GLUT hexose transporters protein expression. Additionally action of Vitamin C on cell membrane permeability, measured by LDH release, lysosomal activity measured by acid phosphate assay (AP), mitochondrial activity measured by Alamar Blue assay and caspase3 activity as an indicator of apoptosis in non-cancer epithelial cells HOSEpiC and cancer chemoresistant OVCAR-3 cells

Results: Vitamin C at doses of 10 and 100 μM increased SVCT1, had no effect on SVCT2 and in dose of 100 μM increased GLUT expression in cancer cells. In dose 0.1-10 μM had no effect on cell membrane permeability mitochondrial activity, lysosomal activity and caspase-3 activity in non-cancer epithelial cells HOSEpiC, however in this doses increased LDH realize, decreased mitochondrial activity, had no effect on lysosomal activity while increased casapase-3 activity in epithelial cancer cells OVCAR-3.

Conclusion: The results of the presented data will provide new and unique information on the merits of Vitamin C as preventive and supportive for the treatment of ovarian cancer. Our study is the first concerning potential action of Vit C not only on cancer but also non-cancer ovarian cells. We suggesting that its nontoxic effects on non-cancer cells may be an indicator of its prophylactic use. This is an extremely important knowledge for biologists, doctors and most importantly for high-risk women.



Recent Publications

1. Carr A C, et al., (2014) The effect of intravenous vitamin C on cancer- and chemotherapy-related fatigue and quality of life. *Front. Oncol.* 4:283

JOINT EVENT

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2. Chen Q, et al., (2008) Pharmacologic doses of ascorbate act as a prooxidant and decrease growth of aggressive tumor xenografts in mice. *Proc. Natl. Acad. Sci. USA* 105(32):11105-9.
3. Shenoy N, et al., (2018) Ascorbic acid in cancer treatment: let the phoenix fly. *Cancer Cell* 34(5):700-706.
4. Y Ma, J Chapman, M Levine, C Z Jiang, Q Wang () High-dose parenteral ascorbate enhanced chemosensitivity of ovarian cancer and reduced toxicity of chemotherapy. *Sci. Transl. Med.* 6(222):222ra18.
5. Verrax J and Calderon P B (2009) Pharmacologic concentrations of ascorbate are achieved by parenteral administration and exhibit antitumoral effects. *Free. Radic. Biol. Med.* 47(1):32-40

Biography

Ewa L Gregoraszcuk is specialized in reproductive endocrinology as well as hormone dependent cancer. She has graduated from Jagiellonian University in Krakow, Poland. She is a Professor of endocrinology, Head of Department of Physiology and Toxicology of Reproduction from 1998. She has authored 173 peer-reviewed articles in leading journals such as *Biology of Reproduction*, *Reproduction*, *Reproductive Toxicology*, *Toxicology*, *Cancer Chemotherapy and Pharmacology*. She is a Member of Polish Endocrinology Society, International Society of Endocrinology (ISE), The New York Academy of Sciences, and The European Tissue Culture Society. Her research topics focusing on the effects of metabolic hormones produced by adipose tissue in light of the increasing incidence of obesity and related problems in reproduction and hormone dependent cancer; reprotox and cancerigenic action of endocrine disruptors, testing antiepileptic drugs as a potent anticancer drug in combination with chemotherapy; testing leptin receptor blockers as a novel treatment for ovarian cancer.

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