Towards The 95th Anniversary of Yerevan State Medical University after M. Heratsi

**Current Issues of Medical Science**

**Conference Abstracts**

12th-15th October 2015

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DEAR PARTICIPANTS

The given appendix to the “New Armenian Medical Journal” is published in the frames of the “Current Issues of Medical Science” Conference which takes place towards the 95th anniversary of Yerevan State Medical University.

The aim of the Conference is to introduce and discuss the achievements of medical science in the previous 5 years, and the development prospects of scientific researches, to promote the science internationalization and modernization process, to connect the YSMU experienced and young scientists, specialists and students conducting research in the theoretical and clinical departments.

Among a number of scientific events the “Student Scientific Day”, which is being organized for the first time, makes the Conference a special one. This is a good opportunity for the students to present their own research results to listen to the invited experienced specialists which will promote the development of student research process within the University.

We are honored to publish the abstracts of YSMU faculty and other Armenian and foreign scientific-educational institutions as well. A part of the received abstracts will be introduced through oral and poster presentations during plenary and afternoon sessions. 3 keynote and 16 plenary presentations will be introduced by leading foreign specialists. And this Abstract Book contains 114 abstracts and 12 research works submitted by YSMU students.

It is a great pleasure to welcome the participants of the Conference. I am full of hope that the analytical results of recent scientific research works will give rise to the future activities and will be opening doors for new ideas of investigations thus enhancing the involvement of students and young researchers in scientific-research activities of the University.

We wish all of us fruitful working environment and new achievements.

Let us follow the slogan of the Conference: “Research, Discover, Change”.

Head of Organizing Committee
YSMU Rector, Professor M.Z. Narimanyan

HEAD OF SCIENTIFIC COMMITTEE
Vice-rector for Science and Research, Professor K.B. Yenkoyan
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**Keywords:** breast cancer, arginase, blood serum, polyamines

**Introduction.** Breast cancer is the most common malignant tumor of women around the world. Therefore, great medical and scientific efforts are continually invested into understanding the disease’s pathology and finding new methods for its diagnosis and treatment [4]. Polyamine (which include putrescine, spermidine and spermine) concentrations are often increased in the blood of cancer patients [2]. It was interesting to investigate the interconnection between polyamine high production and arginase activity in blood serum during women breast cancer. Arginase (EC 3.5.3.1) is binuclear manganese metalloenzyme that catalyzes the hydrolysis of L-arginine into urea and L-ornithine (precursor for polyamines) [3].

**Methods used.** This study was done with 28 breast cancer patients (aged from 37-72, female) who were hospitalized in the National Center of Oncology after V.A. Fanarjyan and with 7 healthy people aged from 34-69 (51±15). Among cancer group patients, 10 cases were stage I (56±9, T1N0M0, 1-2cm), 10 cases had stage II (48±11, T1-2N1M0, 2-2.7cm), 8 cases had stage III (56±12, T2-3N1-3M0, 4.3-5.4cm). The chemoradiotherapy wasn’t applied to any of patient yet. Arginase activity in the serum was studied spectrophotometrically with a modified method of Diacetyl Monoxime Urea. Polyamines quantity of serum was determined by thin layer chromatography [1].

**Results and Discussion.** Our studies have shown that in women breast cancer group of stage I activity of serum Arginase was increased by 28.8%, in group of stage II by 36.1% and group of stage III by 48.4% comparing to the healthy women group. Therefore, arginase enzyme seemed to be a useful biological marker in breast cancer and as an indicator of breast cancer progression. The increase of total polyamines (putrescine, spermidine, spermine) quantity compared with standard is 69.5%, 101% and 131%, respectively in I, II and III stages. The increase of polyamines quantity coincides with the increase of arginase activity, what shows the correlation between them during the disease.

Conclusion. Our recent studies have shown that during inhibition of Arginase II by N⁶-hydroxy-L-arginine in brain and kidney of rats, the quantities of polyamines are decreased ratably [1]. Taking into consideration our results will serve for structure-based drug design and protein-protein docking, because we suggest that arginase inhibition may have some protective effects on different types of cancers development as it inhibits ornithine and also polyamines levels. The synthesis of new inhibitor for Arginase, which will be harmless for organism, will allow us to change the course of cancer. Our further investigations will be directed to answer to the above mentioned questions.

References