Letter to the Editor

Effect of Antibiotics and/or Chemotherapy on Generation of Reactive Oxygen Intermediate by Neutrophils

Dear Editor,

The O_2-generating enzyme NADPH oxidase, plays a crucial role in host defense against microbial infection through the production of reactive oxygen species (ROS).[1]

The multisubunit NADPH oxidase complex can be detected *in vitro* by the nitroblue tetrazolium test (NBT).[2]

The NBT test is used for the diagnosis of chronic granulomatous disease.[3] However, several factors, such as some cytotoxic drugs and antibiotics can affect the results of this test.

The impaired capability of neutrophils to reduce NBT from a patient treated for tuberculosis and non-Hodgkin's lymphoma, before the final diagnosis was made intrigued us to evaluate the NBT reduction test in that patient after completion of his treatment. Then, we observed a subsequent increase of the capability of Phorbol Myristic Acetate (PMA) stimulated NBT test. We therefore concluded that NBT test may not be useful for evaluation of ROS generation in neutrophils after chemotherapy and/or administration of antibiotics. This observation may be attributed either to the effect of immunosuppressive drugs which inhibit PMA-induced superoxide generation of neutrophils,[4] or the anti-inflammatory effects of antibiotics which can decrease the ability of ROS production from polymorphonuclear leukocytes.[5]

Maryam Ayatollahi PhD,
Student of Molecular Genetics,
Transplant Research Center,
Nemazee Hospital,
Shiraz University of Medical Sciences,
Shiraz, Iran.
Tel/Fax: +98 711 6276211
Email: ayatmb@sums.ac.ir

References

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