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Intensive enzymatic study for oxidative stress in asthmatic children

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Theoretical: Asthma is a chronic inflammatory lung disease that results in airflow limitation, hyper-reactivity, and airway remodeling. In childhood asthma, the lungs and airways become easily inflamed when exposed to certain triggers, such as inhaling airborne pollen or catching a cold or another respiratory infection. Childhood asthma can cause bothersome daily symptoms that interfere with play, sports, school and sleep. In some children, unmanaged asthma can cause dangerous asthma attacks. There is strong evidence that an imbalance between the reducing and oxidizing systems favoring a more oxidative state is present in asthma.

Aim of the Study: This study aimed to evaluate whether plasma total antioxidant status (TAS), catalase (CAT), glutathione (GSH), and malondialdehyde (MDA) in the form of plasma reactive oxidants differs between children with asthma and healthy controls in Hilla province of Iraq.

Methodology: The previous parameters were measured in 100 children (60 patients, 40 healthy controls). Patients were newly diagnosed with allergic rhinitis, their age ranged from (7 months-12 years). Plasma enzymes and biomolecule were measured using novel automated measurement methods such as HPLC, ELISA, UV-Vis, and electrophoresis.

Results: TA, CAT and GSH were higher in the control group than in the patient group with significant difference ($P<0.001$), while (MDA) was higher levels in the patients group than in the control group with significant difference ($P<0.001$).

Conclusion: The present study reveals an increase of oxidant forces and decrease antioxidant capacity, together results strongly support that oxidative stress is increased in asthmatic children and may play a role in the pathogenesis of asthma.

Biography

Afrah Nazar Talib holds a Bachelor's degree in Chemistry from Baghdad University in 2008. Currently, she is a Post-graduate student at Babylon University. She also works at a Private Clinical Biochemistry Laboratory.

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