Essam Eldin Mohamed Nour Eldin et al., J Neurol Disord 2015, 3:4
http://dx.doi.org/10.4172/2329-6895.C1.006

OMICS International
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International Conference on
Epilepsy & Treatment
September 21-22, 2015 Baltimore, USA

# The role of anti-epileptic drugs in free radicals generation and antioxidant levels in Epileptic patients

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Many risk factors are often encountered to the pathogenesis of epilepsy. The aim of this work is to study the effect of seizure frequency on free radical generation and antioxidants levels in epileptic patients and the correlation between their values and the level of antiepileptic drugs level in serum with the activity or the control of seizure which may be a prognostic value for seizure. This study was carried out on 15 healthy controls (GI) and 60 epileptic patients were they divided into 2 main groups; 30 controlled epileptic patient treated with antiepileptic drugs where they divided into 2 sub-groups according to the frequency of seizure; 15 epileptic patients were free of seizure for more than one year (GIIA) and 15 epileptic patients were free of seizure for less than one year and more than six months (GIIB). 30 uncontrolled epileptic patients treated with antiepileptic drugs with uncontrolled seizure, this group was divided into 2 subgroups according to the frequency of seizure; 15 epileptic patients had a frequency of seizure less than 4 times per month (GIIIA) and 15 epileptic patients had a frequency of seizure more than 4 times per month (GIIIB). We found that urinary MDA/Creatinine ratio and Nitric Oxide (NO) were significantly increased in GIIB, GIIIA and GIIIB compared to the control group where Vitamin A was markedly decreased in GIIIB group. Also vitamin E was significantly decreased in GIIIA and GIIIB groups. At the study, the serum antiepileptic drugs and other investigated parameters it was found that no statistical correlation appear in all studed groups. NO had a significant negative correlation with serum vitamin E in group GIIA and GIIB. Also, serum NO had negative correlation with vitamin A in group GIIIA. On the other hand serum NO had positive correlation with urinary MDA/Creatinine ratio. The imbalance between free radical generation and antioxidant system may be a cause of seizure attack.

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