

## Does atorvastatin or telmisartan alter CSF memantine kinetics? A preclinical study in normal and STZ-induced rat model of Alzheimer

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**Background:** Interest in drug interactions at blood-CSF or brain barriers has come to focus, as it may alter efficacy or pose adverse outcomes to drugs used in treatment of CNS disorders. In Alzheimer's disease, the potentiality of some common chronically used drugs to modulate memantine CSF kinetics was tested.

**Methods:** 48 adult male albino rats (280-330 mg); half were injected by single bilateral i.c.v. of STZ [3 mg/kg/10 ul/injection site] to comprise [Alzheimer group], the other half received the solvent to comprise [normal group]. After 4 weeks, each group was divided into three subgroups, receiving; atorvastatin (10 mg/kg/day p.o.), telmisartan (10 mg/kg/day p.o.) or saline (2 ml/day p.o.) On day 21 all subgroups received single oral dose memantine (10 mg/kg). Serial blood [0.25, 0.5, 1, 2 hr] and CSF [0.5, 1, 2, 4 hr.] were sampled to determine memantine level by chemiluminescence method.

**Results:** CSF memantine kinetics was significantly altered in presence of the two chronically administered d normal and Alzheimer groups, while, its  $T_{max}$  was significantly delayed ( $p < 0.05$ ) in presence versus absence of telmisartan only in Alzheimer group. The latter finding was found significantly delayed compared to normal group.

**Conclusion:** The co-administered drugs, altered memantine CSF kinetics, changing its CNS availability in level by atorvastatin or in resident time by telmisartan. Such findings mandate clinical validation before memantine dose adjustment with such drugs could be issued.

### Biography

Omnia Nayel was Staff in Pharmacology and Medical Education Departments, Medical Collage, University of Alexandria, Egypt. Currently she is holding equivalent posts in KSU, KSA. Other previous held positions were; Consultant "Central Toxicology Labs" State of Kuwait - Head of Training and Research Unit "Drug information, Center]" Jeddah, KSA. She is member of Cardiology, Hypertension, Atherosclerosis, Pharmacology and Therapeutic Societies in Egypt. During her career she received 2 awards, was granted two fellowships (Washington University, Seattle USA and Dundee University, Scotland UK), supervised 11 thesis, published 31 publications, organized 6 conferences, 17 workshops and symposia, delivered 85 talks as invited speaker and 12 research articles.

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