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**Introduction:** Major depressive disorder (MDD) is a common multifactorial disorder, but the exact pathophysiology is still unknown. *in vivo* and post-mortem studies document volumetric and cellular changes in the hippocampus of depressed patients. Chemical synapses are key functional units of the central nervous system and earlier studies found reduced number of synapses in the prefrontal cortex of depressed patients (Kang HJ *et al.* Nature Medicine 2012;18(9):1413-1417). Mitochondria are intracellular powerhouses generating chemical energy for cellular biochemical reactions. Recent findings suggest that individuals with impaired mitochondrial function may be vulnerable to develop psychopathologies.

**Objectives:** We investigated synapses and mitochondria in post-mortem hippocampal samples from psychiatric patients.

**Methods:** The three study groups were: 1) MDD patients (n=11); 2) patients with alcohol dependence (n=8) and 3) controls (n=10). Controls were individuals who accidentally deceased and had no neuropsychiatric disorders. Three sub-regions of the hippocampus (dentate gyrus, CA3 and CA1 areas were investigated. Ultrathin sections were examined, and photomicrographs were taken for further analysis using a JEOL JEM 1400 FLASH transmission electron microscope. Systematic quantitative analysis was conducted with the NeuroLucida system using unbiased counting principles.

**Results:** We could not detect any differences in synapse and mitochondria densities between the patients and controls subjects.

**Conclusions:** Our preliminary data suggest that despite our expectations hippocampal synapse and mitochondrial densities are rather constant parameters which are not easily affected by psychopathology or alcohol consumption. Potential methodical limitations may also explain this negative finding.

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**Disclosure of Interest:** None Declared

## EPP0649

### The association between depressive symptoms and medication adherence among polypharmacy older adults

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**Introduction:** Among many polypharmacy term definitions, the most common definition refers to the concurrent use of five or

more medications. Multiple medication administration is highly prevalent in older populations with multimorbidity. Apart from polypharmacy impacts on physical health, it might be detrimental to mental health.

**Objectives:** The present study aims to evaluate the association between depression and poor adherence in multimorbidity Iraqi older population using five or more medications.

**Methods:** This cross-sectional study was conducted in Iraq during July and August 2023, involving a sample of 196 older adults recruited from private clinics and hospital clinical medicine wards, all of whom had polypharmacy regimens. The questionnaire includes age, gender, medication regimen adherence and Patient Health Questionnaire-8 (PHQ-8) using a cutoff score of 10. Chi-square and binary logistic regression were performed to determine the association between poor adherence and the presence of depressive symptoms.

**Results:** A total of 196 respondents, mean age = (61±11.4), 49 (25%) male and 147 (75%) female, 178 (90.8%) good adherence and 18 (9.2%) poor compliance, 81 (41.3%) participants have PHQ-8 score was equal or less than ten while 115 (58.7%) have PHQ-8 score was more than 10. Depressive symptoms and patient adherence showed a significant association ( $p = 0.02$ ). Moreover, poor adherence polypharmacy participants were more likely to have depression odd ratio (OR) = 3.9, 95% confidence interval (CI = 1.09 – 13.9;  $p = 0.036$ ).

**Conclusions:** Our findings suggest that depressive symptoms are associated with poor adherence polypharmacy older adults and, highlighting the importance of addressing medication management and mental health in this population.

**Disclosure of Interest:** None Declared

## EPP0650

### Esketamine nasal spray shows greater improvement in health-related quality of life over 32 weeks versus quetiapine extended release in patients with treatment resistant depression

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