Introduction: Clozapine has been well established as the most efficacious medication for treatment refractory schizophrenia. Optimising the benefit during clozapine trial is an important clinical consideration. Therapeutic drug monitoring of clozapine plasma or serum levels has formed a critical part of this. Though there is no agreed standardised therapeutic range, advice traditionally recommends a clozapine level of >350ng/mL in order to effect best response. Most studies analysing the relationship between treatment response and clozapine level are older, have small sample sizes, and do not consider whether additional factors might assist in determining optimal clozapine level for response.
Objectives: We conducted a systematic review of PubMed, PsycInfo and Embase for studies that provided individual participant level data on clozapine levels and response.
Methods: This data was analysed using Receiver Operating Characteristic (ROC) curves to determine the prediction performance of serum clozapine levels for treatment response.
Results: We were able to include data on 294 individual participants. ROC analysis yielded an area under the curve (AUC) of 0.612. The clozapine level at the optimal Youden index was 372ng/mL, and at this level there was response sensitivity of 57.3%, and specificity of 65.7%. The interquartile range for treatment response was 223ng/mL – 558ng/mL. There was no improvement in ROC performance with mixed models including patient sex, age or length of trial.
Conclusions: Clozapine dose should be optimised based on clozapine therapeutic levels. We found that a range between 250 – 550ng/mL could be recommended, while noting that a level of >350ng/mL is most optimal for response.

Disclosure of Interest: None Declared

EPP0264

Anterior pituitary hormones in first-episode psychosis: a systematic review and meta-analysis

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Introduction: Although the role of pituitary gland in schizophrenia and psychotic disorders has been studied for decades, evidence on anterior pituitary hormones in the early phases of psychoses – without the influence of chronicity, comorbidities, and pharmacological treatment – is mostly unclear and inconsistent.
Objectives: Our systematic review and meta-analysis was aimed at comparing the blood concentrations of adrenocorticotropic hormone (ACTH), follicle stimulating and luteinizing hormones (FSH and LH), growth hormone (GH), prolactin (PRL), and thyroid-stimulating hormone (TSH) between people with drug-naïve first-episode psychosis (FEP) and healthy controls.
Methods: We searched main electronic databases for articles indexed up to September 2022. We appraised the quality of data. We carried out random-effects meta-analyses, generating pooled standardized mean differences (SMDs) and estimating between-study heterogeneity. Moreover, we performed sensitivity and meta-regression analyses.
Results: Twenty-six studies were included. People with drug-naïve FEP had higher ACTH ($p<0.001$; moderate-to-high heterogeneity) and PRL ($p<0.001$; high heterogeneity) concentrations, as well as lower TSH concentrations ($p=0.001$; low heterogeneity), than healthy subjects. Sensitivity analyses confirmed these findings. Data were not sufficient to perform meta-analyses on other hormones (FSH, LH, and GH).
Conclusions: People with drug-naïve FEP have abnormal ACTH, PRL, and TSH blood concentrations, supporting the hypothesis that anterior pituitary hormone secretion is altered in the first stages of schizophrenia and psychoses. Additional research is needed to clarify the complex interconnections between vulnerability, environmental factors, and pituitary hormones in FEP.

Disclosure of Interest: None Declared

EPP0265

Association of α-klotho levels with serum copper and cadmium levels in schizophrenia

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Introduction: Schizophrenia is associated with harmful health effects such as oxidative stress from heavy metal exposure. We considered the relationship between genes and heavy metals in association with oxidative stress and then investigated the association between serum α- klotho and copper and cadmium exposure among schizophrenia patients in western India.
Objectives: To investigated the association between serum α-klotho and copper and cadmium exposure among schizophrenia patients in western India.
Methods: 100 individuals participated out of which 50 were diagnosed with schizophrenia, severity was assessed by using PANSS score and 50 were taken as controls using General health questionnaire. Serum Klotho levels were estimated using ELISA. Serum Cadmium (Cd) and Serum Copper (Cu) was estimated using Atomic Absorption Spectrophotometry.
Results: The mean ± SD levels of Serum Cd, Serum Cu and serum Klotho were 1.05 ± 0.55 µg/dl, 135.5 ± 51.25 µg/ml and 62.9 ± 35.1 ng/ml respectively in the patients and 0.23 ± 0.17 µg/dl, 147.9 ± 25.42 µg/ml and 78.6 ± 34.6 ng/ml respectively in controls. The differences in Serum Cd, Serum Cu levels and Klotho levels among the study group were highly significant ($p<0.05$).
Conclusions: Both Cu and Cd levels were significantly raised in schizophrenic patients compared with controls. Serum klotho levels showed a statistically significant decreasing trend with increasing cadmium levels. These results suggest that cadmium levels may be associated with the serum klotho levels which may be associated with decreased cognition in schizophrenia.

Disclosure of Interest: None Declared