

EPP0266

Association of Klotho gene Expression and miRNA-339 in Schizophrenia

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Introduction: Schizophrenia is one of the major neuropsychiatric disorders affecting 1% of the population worldwide. Neuroinflammation, neurodevelopment, and oxidative stress are some of the crucial factors that can contribute to the pathogenesis of Schizophrenia. The Klotho gene is an antiaging gene whose dysregulated expression can lead to Schizophrenia and aging-like symptoms in patients. Klotho gene expression is regulated by miRNA-339, which might lead to expression changes of the klotho gene in schizophrenia patients.

Objectives: This study aimed to determine the role of miRNA-339-5p in the regulation of Klotho gene expression and its circulatory levels in Schizophrenia

Methods: A total of 60 diagnosed patients with Schizophrenia per ICD 10 study subjects and 30 healthy controls were recruited for this study from the outpatient department of psychiatry of All India Institute of Medical Sciences, Jodhpur. Written informed consent was taken from all the study participants. All participants were given the right to withdraw from the study at any point in time. The institutional ethics committee of AIIMS, Jodhpur, approved this study. The expression analysis of the klotho gene and miRNA-339-5p was performed using a reverse transcription polymerase chain reaction. The relative fold change expression was calculated by Livaak's method ($2^{-\Delta\Delta Ct}$).

Results: In Schizophrenia cases, serum Klotho protein levels were higher than healthy controls, though non-significant. We observed that the klotho gene was upregulated (figure 1), and miRNA-339-5p was downregulated (figure 2) compared to the healthy control.

Image:

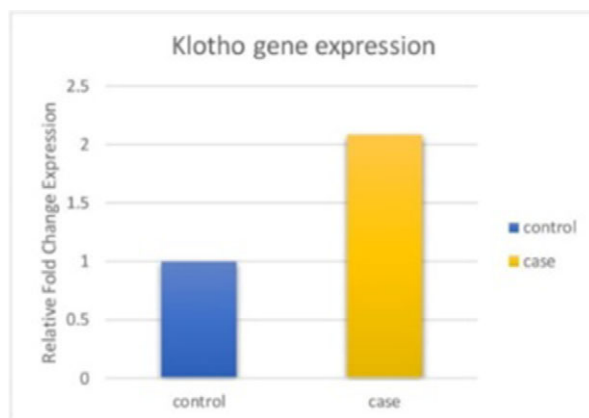


Figure 1: Fold change expression of klotho gene among cases and controls

Image 2:

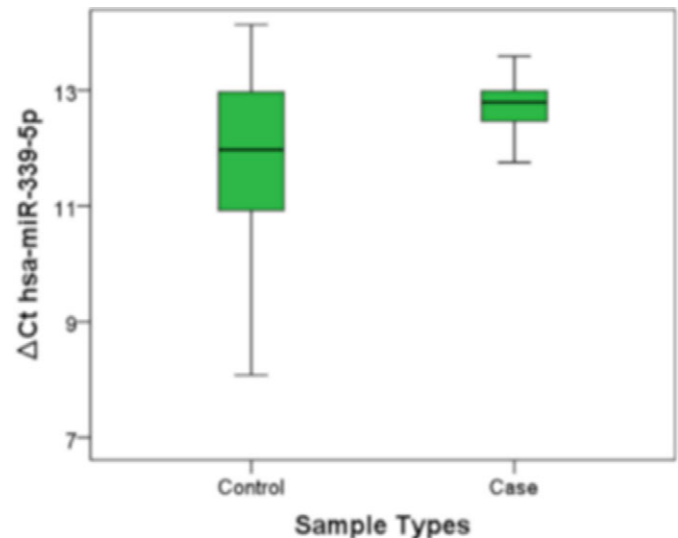


Figure 2: Showing ΔCt values of hsa-miR-339-5p in cases and controls.

Conclusions: The present study is the first to evaluate the klotho gene expression and correlate it with miRNA-339-5p. Our study found increased expression of the klotho gene in Schizophrenia patients as compared to the controls. In this study, we also observed that miRNA-339-5p was downregulated, which correlates with the klotho gene expression inversely. However, these are the preliminary findings due to less sample size and need to be replicated in the large sample size for further confirmation.

Disclosure of Interest: None Declared

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EPP0267

The effect of the COVID-19 pandemic on the treated incidence of psychotic disorders in South London

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Introduction: Evidence suggests that the COVID-19 pandemic was accompanied by an increased exposure to risk factors for psychosis, such as psychological stress, substance use, social isolation and deprivation, as well as a potential direct biological impact of the COVID-19 infection on psychosis. However, the impact of the COVID-19 pandemic on the rates of first-episode psychosis (FEP) has not yet been examined.

Objectives: The aims of the current study were to 1) establish the FEP incidence between March 2019 and March 2021 in an inner London catchment area; 2) compare FEP incidence rates for the

first year of the COVID-19 pandemic (March 2020 – February 2021), with those for the year prior (March 2019 – February 2020).

Methods: We screened the clinical records of all individuals living in the London boroughs of Southwark and Lambeth who were referred to the early intervention in psychosis services before (from 1 March 2019 to 28 February 2020) and during (from 1 March 2020 to 28 February 2021) the COVID-19 pandemic. We used Office for National Statistics (ONS) data to estimate the risk populations stratified by sex and age group. We computed crude and sex-age standardised FEP incidence per 100,000 persons-year. We used Poisson regression to calculate the incidence rate ratio (IRR) before and during the COVID-19 pandemic and to examine the incidence variation by sociodemographic factors.

Results: A total of 321 incident cases of FEP were identified during the COVID-19 pandemic accounting for a crude rate of 70.1 (95% CI 62.4 - 77.7) per 100,000 person-year. The crude rate for the year before was 47.5 (95% CI 41.2 - 53.8). The incidence variation between the two years accounted for an adjusted IRR of 1.46 (95% CI 1.23 - 1.76). The increased FEP rates were equally observed across the boroughs of Southwark and Lambeth and men and women. Individuals aged 20-24 (IRR 1.66; 95% CI 1.13 - 2.42) and those from the black ethnic group (IRR 1.61; 95% CI 1.24 - 2.09) showed the greatest incidence increases.

Conclusions: To the best of our knowledge, this is the first study establishing the variation in FEP incidence before and during the COVID-19 pandemic across all adult age groups. We provide the first evidence that the COVID-19 pandemic resulted in a 46% increase in the incidence of psychotic disorders in South London. The increase was higher for young individuals and ethnic minorities. This finding should inform public health research and demonstrates the need for adequate resources for mental health secondary services.

Disclosure of Interest: None Declared

EPP0268

Quantitative electroencephalogram study in patients with schizophrenia : a literature review

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Introduction: There has been a continuous effort to discover and specify the neural correlates of schizophrenia (SCZ) based on spontaneous electroencephalogram (EEG) records. Besides contributing to a more effective diagnosis, biomarkers can be crucial to SCZ to hope for therapeutic progress.

Objectives: a literature review was conducted to ascertain whether or not quantitative EEG spectral abnormalities are consistent enough to warrant additional effort towards developing them into a clinical diagnostic test for schizophrenia.

Methods: A systematic search of the databases , ScienceDirect, and PubMed was conducted using the following words : schizophrenia, electroencephalography, neurobiology. The Preferred Items Reporting for Systematic Reviews and Meta-Analyses (PRISMA) guidelines were followed in the construction of this literature

review. Primary research articles that reported descriptive EEG results, included comparisons of subjects with and without anti-psychotic therapy, and excluded patients with epilepsy were included in the analysis. We analyzed pooled data, where possible, from studies with a similar intervention and methodology.

Results: Our study included 11 articles on quantitative EEG changes in schizophrenic patients divided as follows: 2 articles on the genetics of SCZ and EEG data, 3 articles on the psychopathology of SCZ and EEG data, 2 articles on hemispheric coherence, and finally 4 articles on the effect of treatment on EEG. Increased beta activity can be considered as an inherited feature of SCZ. Elevated delta/theta and gamma activity may serve as a specific biomarker for this condition. The delta wave may be a neurophysiological tool to differentiate between negative and positive forms of SCZ. EEG tracings of schizophrenic patients showed increased intra- and inter-hemispheric coherence compared to healthy subjects. Treatment with an antipsychotic drug was associated with a more marked increase in frequency bands in patients receiving an atypical antipsychotic drug.

Conclusions: It is important to study the electroencephalographic changes not only to better understand the etiopathogenesis of SCZ, but also to search for specific physiological biomarkers.

Disclosure of Interest: None Declared

EPP0269

The structure stability of negative symptoms: longitudinal network analysis of the Brief Negative Symptom Scale in subjects with schizophrenia

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Introduction: Negative symptoms (NS) represent an unmet need of treatment in schizophrenia (SCZ). As a result, these symptoms pose a significant burden on patients, their families, and the health care system. In the last decade, the conceptualization model that has received the most support from the literature has described 2 domains of NS: the expressive deficit (EXP), which includes blunted affect and alogia, and the motivational deficit (MAP), which includes avolition, asociality, and anhedonia. However, different confirmatory factor-analytic studies suggest that the bi-dimensional model may not capture the complexity of this construct, which could be better defined by the 5-factor model. To date no study exploiting innovative tools and state of the art assessment instruments has yet been conducted to evaluate the NS structure stability over time.

Objectives: The aim of this study was to investigate the stability of the latent structure of NS in subjects with SCZ.