

EPP0646

Nanopore sequencing as a novel approach to transcend into the deep universe of schizophrenia

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Introduction: Schizophrenia (SCZ) is a chronic neuropsychiatric disorder possessing a multifactorial nature and dual facets of symptoms with a core underlying genetic mechanism that is still obscure. Lately, genomic studies revealed numerous single nucleotide polymorphisms (SNPs) that are non-coding and influence ribonucleic acid (RNA) expression, particularly its splicing.

Objectives: Considering that next-generation sequencing (NGS) protocols focus upon long-read sequencing as opposed to conventional RNA sequencing methodologies once with the advent of Oxford Nanopore Technologies’ (ONT) MinION, we primarily aimed to gather and review all evidence into how this approach may deepen and further offer insight into SCZ still undiscovered domain.

Methods: The relevant literature searches were performed using distinct combinations of keywords including “schizophrenia” alongside „Nanopore”, “MinION”, and “Oxford Nanopore Technologies” on four databases (PubMed/Medline, ISI Web of Knowledge, Scopus, and ScienceDirect). We implied the entries to strictly “research articles” written in English as inclusion criteria.

Results: By restricting the returned results starting with the year when the platform was officially launched, a total of $n = 69$ studies were displayed between the pre-established interval (2014 – 2022). If taken per database, $n = 2$ were identified in PubMed/Medline, $n = 7$ in ISI Web of Knowledge, $n = 4$ in Scopus, and $n = 56$ in ScienceDirect. In chronological order, $n = 0$ were published in 2014, $n = 3$ in 2015, $n = 7$ in 2016, $n = 7$ in 2017, $n = 9$ in 2018, $n = 3$ in 2019, $n = 7$ in 2020, $n = 19$ in 2021 and $n = 14$ in 2022. Finally, per the strategy applied, $n = 49$ were returned for “schizophrenia” + “Nanopore” from which $n = 2$ in PubMed/Medline, $n = 5$ in ISI Web of Knowledge, $n = 4$ in Scopus, and $n = 38$ in ScienceDirect. For “schizophrenia” + “MinION”, there was a cumulative number of $n = 5$, from which we had $n = 0$ in PubMed/Medline, $n = 0$ in ISI Web of Knowledge, $n = 0$ in Scopus, and $n = 5$ in ScienceDirect. Finally, for “schizophrenia” + “Oxford Nanopore Technologies” were displayed $n = 15$, and the situation was $n = 0$ in PubMed/Medline, $n = 2$ in ISI Web of Knowledge, $n = 0$ in Scopus, and $n = 13$ in ScienceDirect.

Conclusions: We presently assist to a fulminant ascension in the literature, with applicability in other fields. Perhaps as cornerstone stands a recent publication in which the authors reveal the risk of the Calcium Voltage-Gated Channel Subunit Alpha 1 C (CACNA1C) gene involved, being identified thirty-eight novel exons and two hundred and forty-one novel transcripts following RNA purification from six regions (cerebellum, striatum, and dorsolateral prefrontal cortex) among which targeted were cingulate, occipital and parietal cortexes.

Disclosure of Interest: None Declared

EPP0647

The suitability of zebrafish (*Danio rerio*) as an optimal organism to further investigate the associated schizophrenia-like phenotype

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Introduction: Zebrafish (*Danio rerio*) has evolved over the years as a preferred organism due to its vast repertoire in research fields that mimic a targeted phenotype, particularly behavioral typologies and specific attributes comparable to murine models and relatively high homology with humans. Considering this consideration, different pharmacological treatments have been tested and proven that under different concentrations may trigger schizophrenia (SCZ)-like symptoms.

Objectives: Starting from the actual stage of knowledge according to which agents used as N-methyl-D-aspartate (NMDA) inhibitors (MK-801, ketamine, and phencyclidine) alongside psychedelic (mescaline, lysergic acid diethylamide), psychoactive substances (amphetamine), and non- and essential amino acids (proline and methionine), we aimed to reunite and review all existing evidence. This approach may offer an updated and critical overview regarding the possible future directions surrounding these compounds regarding the pharmaco-dynamics/kinetics.

Methods: To ensure the coverage of all relevant literature, we performed searches in four databases (PubMed/Medline, ISI Web of Knowledge, Scopus, and ScienceDirect) per combinations of keywords: “schizophrenia” with “MK-801”, “ketamine”, “phencyclidine”, “mescaline”, “lysergic acid diethylamide”, “amphetamine”, “proline”, “methionine”, and “zebrafish”. Eligible studies had to be “research article(s)” written in English.

Results: A total of $n = 246$ studies were returned during the established interval (2010 – 2022). Precisely, $n = 16$ were identified in PubMed/Medline, $n = 16$ in ISI Web of Knowledge, $n = 17$ in Scopus, and $n = 197$ in ScienceDirect per database. If taken per year, $n = 13$ were published in 2010, $n = 12$ in 2011, $n = 15$ in 2012, $n = 24$ in 2013, $n = 21$ in 2014, $n = 21$ in 2015, $n = 32$ in 2016, $n = 8$ in 2017, $n = 12$ in 2018, $n = 9$ in 2019, $n = 17$ in 2020, $n = 34$ in 2021, and $n = 28$ in 2022. Depending on the combination of keywords, we had the following situation: $n = 65$ for “schizophrenia+MK-801+zebrafish”, $n = 42$ for “schizophrenia+ketamine+zebrafish”, $n = 21$ for “schizophrenia+phencyclidine+zebrafish”, $n = 4$ for “schizophrenia+mescaline+zebrafish”, $n = 5$ for “schizophrenia+lysergic acid diethylamide+zebrafish”, $n = 36$ for “schizophrenia+amphetamine+zebrafish”, $n = 37$ for “schizophrenia+proline+zebrafish”, $n = 36$ for “schizophrenia+methionine+zebrafish”.

Conclusions: There can be seen an uprising trend in the current literature of studies focused on the administration of MK-801, ketamine, amphetamine, proline, methionine, and phencyclidine aiming to trigger SCZ-like symptoms as opposed to mescaline and lysergic acid diethylamide. Most of the data is contradicting, with

either a decrease/increase in behavior (locomotion, aggression, sociability, circling behavior, and memory deficits), which is why additional studies are mandatory.

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EPP0648

Prolactin levels and aggressive behaviour in men with Schizophrenia

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Introduction: Recent studies find a high level of prolactin in naive patients with consequences on their behavior. These results have shed light on new etiopathogenic avenues in schizophrenia and suggested new preventive approaches.

Objectives: The objective of our work was to investigate the links that may involve prolactin levels to aggressive behavior in patients followed for antipsychotic-naïve schizophrenia or in therapeutic discontinuation.

Methods: We conducted a one-year descriptive and cross-sectional study of thirty male patients hospitalized for a treatment-naïve psychotic relapse or who had been discontinued for more than two months. These patients were assessed using a questionnaire as well as the Overt Aggression Scale (OAS). A blood sample was taken to specify the prolactin level.

Results: Eleven patients were aggressive (37%). Seven patients (23%) had hyperprolactinemia. Hyperprolactinemia was also inversely associated with aggression since inversely significant correlations were objectified for prolactinemia and respectively the OAS score and the verbal aggression subscore ($Rho = -0.391$; $p = 0.033$) and ($p = 0.016$, $Rho = -0.438$). The score of aggressiveness towards others also evolved inversely to the prolactin level with a p close to significance ($p = 0.056$).

Conclusions: Our results support the hypothesis of a probable action of prolactin as a protective factor against aggression. High prolactin levels may therefore represent a diagnostic lead for a particular profile of a certain patient group with a particular course. However, this subject is still unresolved in the literature and future studies seem necessary.

Disclosure of Interest: None Declared

EPP0649

Prolactin and Family Psychiatric History in Schizophrenia

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Introduction: Schizophrenia is a chronic and multifactorial mental disorder. Research suggests the presence of an abnormality in prolactin secretion during the genesis of the disease and at the same time, the involvement of genetics in its pathogenesis has long been the demand of researchers in the field of genetics since familial forms of schizophrenia have been observed.

Objectives: The objective of this study was to describe the prolactin profile and to study its relationship to the patients' family history of psychiatric illness.

Methods: This was a descriptive, cross-sectional study of thirty male patients hospitalized for a psychotic relapse who were naïve or discontinuing treatment for at least two months. Patients were assessed using a semi-structured questionnaire. A blood sample was taken to measure levels of prolactin.

Results: The age ranged from 17 to 56 years. Most patients had a family medical history. Twenty patients (66%) had a family psychiatric history of schizophrenia (56%), mental retardation (3%), personality disorder (3%) and schizoaffective disorder (3%). Prolactin levels ranged from 0.5 to 45.67 ng/mL with a mean of 14.03 ng/mL. Seven patients (23%) had hyperprolactinaemia. All patients with hyperprolactinaemia had a family history of psychiatry with a statistically significant difference ($p = 0.033$).

Conclusions: Hyperprolactinemia could be one of the "endophenotypes" that reflect a vulnerability to schizophrenia, found in familial forms of the disease. In this context, longitudinal studies on a larger scale and family studies including siblings without schizophrenia should be undertaken.

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EPP0650

From "cutaneous anthrax" to "primary delusional infestation"

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Introduction: Primary delusional infestation is a rare psychiatric condition in which patients mistakenly believe that their skin or other body parts are infested by small, living organisms, despite the fact that no organisms can be found upon investigation. The delusion occurs concurrently with abnormal cutaneous sensations. Therefore, they typically have a history of prior negative evaluations by dermatologists and general practice physicians. In addition, patients may have also received repeated courses of dermatologic and anti-infective therapies, despite the lack of an objective diagnosis.

Objectives: To describe the clinical case of a patient who suffered from an undiagnosed primary delusional infestation for 12 years.

Methods: Description of a clinical case and a non-systematic review of the literature.

Results: We describe the clinical case of a 65-year-old woman who spent 12 years being evaluated by multiple medical and surgical specialties for the following complaint: "sensation of something moving beneath the skin." At the onset of the complaint, the patient believed that this "strange sensation" was due to a recent tooth procedure. However, as she felt the discomfort not improving, she believed it to be a consequence of a cutaneous *anthrax* infection. Thus, the patient started using tweezers to grasp the living organism