

The world's first pharmacogenetic test for patients with treatment-resistant schizophrenia

The world's first genetic test for patients with treatment-resistant schizophrenia is launched by 25th March 2021.

At the webinar organised by Psychiatric Genetic Testing Ltd, the PGT Clozapine Test was launched in presence of nearly 380 senior psychiatrists of the United Kingdom in London.

The United Kingdom psychiatrists would be the first in having access to a test that identifies key elements of a patient's genetic profile which will allow truly individualised treatment for people with the most difficult to treat schizophrenia.

The webinar focused on the only effective treatment for people with treatment-resistant schizophrenia – the atypical antipsychotic clozapine.

Research over the past quarter century has shown that in these patients, clozapine treatment improves symptoms, reduces hospital admissions, and prevents premature death. Clozapine should be used after a patient has failed treatment with two different antipsychotic medicines.

In a minority of patients, clozapine can cause serious side-effects and, despite its benefits, there is often a reluctance to prescribe it because, until now, it could not be predicted who would respond and who might have a toxic reaction.

This has resulted in many patients facing long delays – sometimes years – before they are offered treatment with clozapine. This prolongs suffering for patients who may instead receive treatment with cocktails of antipsychotic medicines which are not effective for them but can be potentially harmful. It also adds to healthcare costs.

David Taylor, Professor of Psychopharmacology at King's College, London, creator of the test, explained aspects of a patient's genetic profile have been shown to be important in clozapine therapy. For the first time, the PGT Clozapine Test removes much of the uncertainty about the use of clozapine by providing information on the risk of a toxic reaction and the likelihood that a patient will respond. He said, "Doctors can now have access to detailed information that will enable them to be much more precise when making treatment decisions. In the UK alone, the PGT Clozapine Test has the potential to transform the lives of tens of thousands of vulnerable patients with schizophrenia."

Professor Sir Robin Murray FRS, one of the world's leading psychiatrists, chaired the webinar and hailed the test as a crucially important step towards the goal of personalised treatment for people with psychiatric disorders.

Source: www.psychgenetic.com

About the PGT Clozapine Test

The test uses a saliva sample. It analyses ten genes with sensitivity and specificity above 99% for single-nucleotide variants and small insertions/deletions (≤ 20 bp) to provide information on key aspects of clozapine treatment:

- The likelihood of response
- The risk of agranulocytosis
- The patient's status in respect of benign ethnic neutropenia
- The rate of clozapine metabolism
- The recommended starting dose and
- The recommended treatment dose

The PGT Clozapine Test was created by Professor David Taylor, who is Professor of Psychopharmacology at King's College, London and Director of Pharmacy and Pathology at the Maudsley Hospital.

Treatment-resistant schizophrenia and the role of clozapine in its treatment

Schizophrenia has been described as "the worst disease affecting mankind, even AIDS not excepted."¹ It is a disintegrative psychosis where the person affected experiences a distorted reality. Key symptoms include delusions, hallucinations and paranoia. In addition, disordered thoughts and emotions are very common and a deficit syndrome involving poverty of thought and speech, self-neglect and difficulties with relationships affects more than half of patients. Lifetime prevalence is about 1 in 83, and a person with schizophrenia is about 3 times more likely to die prematurely than the population average.²

Antipsychotic medicines are the mainstay of treatment for schizophrenia but about one-third of patients do not respond well. NICE has defined treatment-resistant schizophrenia as follows: people with schizophrenia whose illness has not responded adequately to treatment despite the sequential use of adequate doses of at least 2 different

antipsychotic drugs of which at least one should be a non-clozapine second-generation antipsychotic. Patients who meet these criteria should be offered clozapine.³

Clozapine is the only effective treatment for people with treatment-resistant schizophrenia.⁴ Its use significantly reduces both hospital admissions and long-term mortality.⁵

Although the value of clozapine is widely acknowledged there is still a reluctance to prescribe; as a result, usage rates vary widely and there may be long delays before eligible patients are offered clozapine. This results in poor outcomes, exposure to potentially hazardous antipsychotic polypharmacy, unnecessary distress for patients, and avoidable healthcare costs.

The reluctance to use clozapine is due to a number of factors. Because clozapine can cause neutropenia in about 3% of patients, and potentially life-threatening agranulocytosis in about 0.4% of patients, haematological monitoring is

The PGT Clozapine Test was created by Professor David Taylor, Professor of Psychopharmacology at King's College, London, and Director of Pharmacy and Pathology at the Maudsley Hospital. Professor Taylor is the author of over 350 peer-reviewed publications in journals such as the Lancet, BMJ, British Journal of Psychiatry and Journal of Clinical Psychiatry, which have been cited over 15,000 times. In 2014, David was ranked in the top 100 clinical leaders in the NHS by the Health Service Journal. He is the Editor-in-Chief of the journal Therapeutic Advances in Psychopharmacology.

mandatory and is a major barrier to treatment.⁶ A further complication is the presence of benign ethnic neutropenia in patients of African ancestry which can be misconstrued and so prevent patients from being offered treatment.⁷ Individuals vary in their metabolism of clozapine, creating uncertainty about an appropriate starting dose and the optimal treatment dose. In addition, surveys of clinicians have repeatedly found negative perceptions and inadequate knowledge of how to manage clozapine's adverse effects as key factors limiting prescribing.⁸ A recent study by a group at the Maudsley Hospital in London found that clozapine is prescribed for less than a third of eligible patients in the UK.⁹

Who will benefit from the PGT Clozapine Test?

Patients with treatment-resistant schizophrenia are among the most vulnerable of those in the care of mental health services. Four groups are likely to benefit:

- Any patient who meets criteria for treatment-resistant schizophrenia but has not yet been offered clozapine
- In addition, in patients already receiving clozapine:
 - o Patients with only a partial treatment response
 - o Patients where neutrophil counts necessitate interruption of treatment
 - o Patients with possible benign ethnic neutropenia but their status is uncertain

It has been estimated that there are currently nearly 90,000 patients in the UK who would meet criteria for treatment-resistant schizophrenia but who are not currently in treatment with clozapine.

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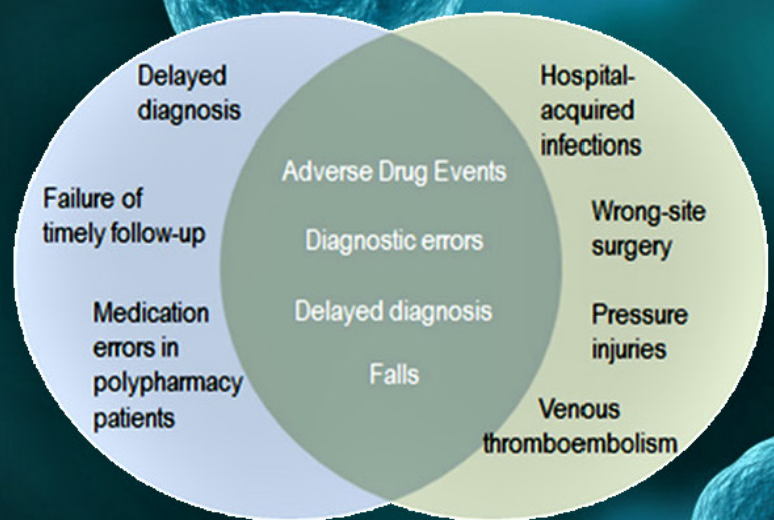
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Improve patient safety by eliminating adverse events in health care settings

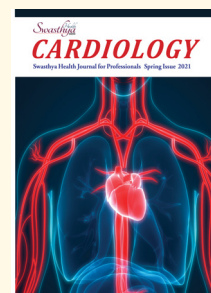
It is estimated that every year more than 300,000 patients acquire a healthcare associated infection (HCAI, HAI or nosocomial infection) as a result of care with in the NHS.

Primary and ambulatory care

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