

Editorial

Personalised medicine in psychiatry? Yes, but how?

Achievement of the highest possible level of functioning is the ultimate goal of any pharmacotherapy. For psychiatric patients with major depression the goal should be remission. To attain it, however, this can be an extremely long-lasting trial and error process. For patients with Alzheimer's dementia, moderate improvement for a limited time may be expected at best. Because of multiple limitations of established drugs and pharmacotherapies, there is an urgent need in psychiatry to accelerate clinical improvement and attain better treatment outcomes. Novel drugs are actually lacking. We have to evaluate how to make the best with the available drugs. Treatment should be evidence based, which means that first-line drugs should always be those that have shown to be effective in randomised clinical trials. This approach, however, ignores individual needs of individual patients. As a consequence, many real-life psychiatric patients are treated with poorly validated therapies based on clinical practice, as it is the case for many drug combinations. New hope for improved therapies has emerged from the concept of personalised medicine. In association with the human genome project, it was suggested that genetic biomarkers may predict a drug's efficacy or likelihood of toxicity (1). Best practice guidelines for personalised psychopharmacotherapy, however, are so far not available. In a peer article entitled 'Focusing on drug versus disease mechanisms and on clinical subgrouping to advance personalised medicine in psychiatry' (2), José de Leon highlights in this issue actual limitations and needs for personalised medicine in psychiatry.

Though we have still limited knowledge on mechanisms underlying therapeutic actions of available psychoactive drugs, José de Leon claims that available methods like genotyping for drug selection and therapeutic drug monitoring for dose selection (3), patient-related genetic and environmental variables, and drug-related pharmacokinetic and pharmacodynamic properties should be considered. Rationale amalgamation of available knowledge can have a high impact on the psychopharmacotherapy with available drugs. Assessment of patients' diagnoses

and psychopathology, however, is a major drawback. José de Leon tries to convince readers of his article that we have to move away from widely accepted classifications and concepts of psychiatric disorders and renew our imprinted thinking. Psychiatric disorders like schizophrenia and depression should not be regarded as diseases in the medical sense but as syndromes consisting of multiple symptoms. The widely unknown or forgotten classification of Leonhard (4) is regarded as more appropriate to describe the pathophysiology of psychiatric disorders, especially in the light of personalised medicine for psychiatry. Leonhard proposed for schizophrenia that it is a syndrome including several illnesses. Some of the symptoms have a genetic background others not. A genetic variant that might be associated with Leonhard's concept of schizophrenia is periodic catatonia (5). In a case control study, however, the phenotype of periodic catatonia was not associated with genetic variants (6) that had been previously identified (5). For personalised treatment in psychiatry, it is proposed by José de Leon that Leonhard's concepts should be followed consequently to subdivide patients with schizophrenia and major depression for future studies on psychotropic drugs.

Progress is urgently required to improve psychopharmacotherapy. To make progress, it is necessary from time to time to check the accuracy of established concepts, as they can be obstacles to progress. José de Leon checked concepts of actual psychopharmacotherapy for us and came to the conclusion that we should renew well-accepted views of psychopathology to enable personalised psychopharmacotherapy. I highly recommend reading of this perspective article. Let you be guided by the reflections of José de Leon (2).

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References

1. WANG B, CANESTARO WJ, CHOUDHRY NK. Clinical evidence supporting pharmacogenomic biomarker testing provided in US Food and Drug Administration drug labels. *JAMA Intern Med* 2014. Published online October 13, 2014. doi:10.1001/jamainternmed.2014.5266.
2. DE LEON J. Focusing on drug versus disease mechanisms and on clinical subgrouping to advance personalised medicine in psychiatry. *Acta Neuropsychiatr* (in press).
3. CRETTOLE S, DE LEON J, HIEMKE C, EAP CB. Pharmacogenomics in psychiatry: from therapeutic drug monitoring to genomic medicine. *Clin Pharmacol Ther* 2014;**95**:254–257.
4. LEONHARD K. Classification of endogenous psychoses and their differentiated etiology, 2nd revised and enlarged edn. Wien, NY: Springer, 1999.
5. SCHANZE D, EKICI AB, PFUHLMANN B et al. Evaluation of conserved and ultra-conserved non-genic sequences in chromosome 15q15-linked periodic catatonia. *Am J Med Genet B Neuropsychiatr Genet* 2012;**159B**:77–86.
6. STÖBER G, KOHLMANN B, IEKIERA M et al. Systematic mutation analysis of KIAA0767 and KIAA1646 in chromosome 22q-linked periodic catatonia. *BMC Psychiatry* 2005;**5**:36.