Reviewer's report

Title: Personalized medicine in psychiatry: problems and promises

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Reviewer: Peter Falkai

Reviewer's report:

In a review, Ozomaro et al. described genetic alterations, epigenetic modifications, and biochemical alterations as well as environmental factors in 5 psychiatric disorders as background of the treatment goal personalized medicine. They report on schizophrenia, bipolar disorder, depression, PTSD and alcohol dependence. They additionally describe genetic alterations in drug-metabolizing enzymes. A short chapter describes imaging genetics and in the conclusion, they state that the prospect of personalized medicine in psychiatry reflects ideals still largely unrealized and investigations of genexenvironment and genex biomarker are warranted.

The manuscript tries to relate to "total psychiatry" and mainly genetic aspects in psychiatric disorder and is difficult to read and overloaded with details. A guideline on the impact on personalized medicine is missing and the conclusion that to date we have no causative treatment strategies for severe psychiatric disorders and therefore personalized medicine is in its infancy is missing.

The manuscript should be re-written considerably, splitted and focus only on psychosis (schizophrenia and affective disorders). PTSD and alcohol dependence should be described in separate manuscripts, the switching between these disorders is confusing.

With respect to genetic findings, some genes from association studies are described in detail while other - and more important- findings from GWAS studies are ignored. Therefore the review seems to be unbalanced and not up to date.

The neuroimaging part is rudimental and should be improved including results from structural, functional imaging and spectroscopy.

In the environment chapter, drug abuse (e.g. cannabis) is missing.

Quality of written English: Acceptable

Statistical review: No, the manuscript does not need to be seen by a statistician.

Declaration of competing interests:

I have no competing interests or funding related to the manuscript