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NEW DEVELOPMENTS IN THE MULTI-OMICS PREDICTION OF TREATMENT RESPONSE PREDICTION IN PSYCHIATRY

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The role of pharmacogenomics is to create an effective therapeutic strategy based on the genomic profile of a patient in order to improve response as well as remission and in particular to reduce relapse. To date, in the psychiatric field, although genomic studies on psychotropic medications have provided important insights into the molecular components involved in clinical outcomes, unfortunately findings have not identified biomarkers with a clear clinical utility (1). Studies using pharmacogenomics and pharmacotranscriptomic approaches, focusing on genetic variants and expression levels of relevant genes for pharmacokinetic and pharmacodynamic effects of psychotropic drugs are relevant for personalized medicine in Psychiatry. These two layers of omics and their integration provide important and novel information regarding therapeutic response and side effects, contributing to optimizing pharmacological treatment in an individualized approach (2). Dr Bernhard Baune will develop the concept of the multi-omics foundation of response to pharmacological treatments, which entails the genomics, transcriptomics and epigenomics layers of response to a pharmacological intervention (2, 3). This approach requires the analyses of individual omics layers as well as an integrated analysis using multiple omics in relation to response to treatment. He will use two field examples to illustrate this multi-omics concept of prediction of treatment outcomes: first, the PREDDICT study, which is a randomized controlled trial to test the efficacy of an antidepressant plus augmentation with celecoxib vs antidepressant plus placebo in major depressive disorder (MDD) (3). In a second case study, he will present multi-omics results from the randomized CERT-D study that tests the antidepressant effects of a personalised cognitive training program in MDD (4). In both example, novel multi-omics predictions of treatment response to pharmacological and non-pharmacological interventions in MDD will be presented.

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