

Abstract

Background: ketamine is a rapid and potent antidepressant treatment, however no sufficient predictors for tailored treatment have been identified to date. The aim of the thesis was to identify possible clinical and phenomenological characteristics, associated with better antidepressant response in patients receiving ketamine.

Materials and methods: data from 86 depressed patients from cohorts A (2010-2015) and B (2018-2022) were utilized. All patients underwent ketamine infusion and demographic as well as clinical assessment (severity of depressive symptoms, subjective and objective anxiety and anhedonia before and after ketamine application). In addition, an electrocardiogram was taken to assess heart rate variability in cohort A and blood pressure, heart rate, and altered state of consciousness scales were recorded in cohort B during ketamine intoxication.

Results: in cohort A, the use of higher doses of benzodiazepines was associated with worse response at day 3 ($p = 0.04$) and day 7 ($p = 0.02$) after ketamine administration. Responders showed higher heart rate ($p = 0.001$) and differed from nonresponders in heart rate variability ($p = 0.011$). In cohort B, responders reached higher values of systolic ($p = 0.003$) and diastolic ($p = 0.005$) blood pressure during intoxication, but not higher heart rate. Responders did not differ from nonresponders in depression phenotype or in dissociative or psychotic symptoms during intoxication. Antipsychotic use was associated with a significantly worse response to ketamine ($p = 0.001$).

Conclusion: the results of the thesis have several pathophysiological and clinical implications, especially the findings concerning concomitant medication, as they potentially modify depression treatment, or on autonomic response during ketamine infusion, as they potentially allow tailoring continuous ketamine therapy. A better understanding of the relationship between these parameters requires their comprehensive assessment in regression models in a larger sample of patients and in meta-analyses

Key words: depression, ketamine, antidepressant, outcome prediction, clinical predictors, intoxication phenomenology.