

# The genetics of drug-related movement disorders (DRMD), reply to comment: Antipsychotic-induced catatonia and neuroleptic malignant syndrome: The dark side of the moon

Citation for published version (APA):

van der Burg, N. C., Al Hadithy, A. F. Y., van Harten, P. N., van Os, J., & Bakker, P. R. (2021). The genetics of drug-related movement disorders (DRMD), reply to comment: Antipsychotic-induced catatonia and neuroleptic malignant syndrome: The dark side of the moon. *Molecular Psychiatry*, 26(11), 6115-6115. <https://doi.org/10.1038/s41380-021-01212-z>

## Document status and date:

Published: 01/11/2021

## DOI:

[10.1038/s41380-021-01212-z](https://doi.org/10.1038/s41380-021-01212-z)

## Document Version:

Publisher's PDF, also known as Version of record

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## COMMENT



# The genetics of drug-related movement disorders (DRMD), reply to comment: Antipsychotic-induced catatonia and neuroleptic malignant syndrome: The dark side of the moon

Nadine C. van der Burg<sup>1</sup>✉, Asmar F. Y. Al Hadithy<sup>2</sup>, Peter N. van Harten<sup>1,3</sup>, Jim van Os<sup>3,4,5</sup> and P. Roberto Bakker<sup>3,4,6</sup>

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*Molecular Psychiatry* (2021) 26:6115; <https://doi.org/10.1038/s41380-021-01212-z>

**TO THE EDITOR:**

We thank Dusan Hirjak et al. for their comments and compliments on our paper *The genetics of drug-related movement disorders, an umbrella review of meta-analyses*. They suggest that antipsychotic-related catatonic symptoms (ACS) and neuroleptic malignant syndrome (NMS) should have been included in the umbrella review (UR). We find their concern important and would like reply as follows.

Hirjak et al. state that in clinical practice it is often difficult to disentangle genuine catatonia from ACS, given some overlapping signs and symptoms. In our UR, we state that drug-related movement disorders (DRMD) may be involved in the pathophysiology of psychotic disorders. In that view antipsychotics are not the cause but a moderating factor and may increase the risk of motor dysfunctions. E.g. motor dysfunctions are found in a proportion of antipsychotic-naïve patients, with first-episode schizophrenia and that subgroup is extra vulnerable for drug-induced movement disorders [1–4]. It could be that the same counts for catatonia, i.e. subclinical genuine catatonia may be involved in the pathophysiology of psychotic disorders (and other psychiatric disorders) and ACS could be, partly, an aggravated form of underlying genuine catatonia. Also, malignant catatonia is hard to distinguish from NMS. In both syndromes, antipsychotic treatment plays an important role but in different ways: antipsychotics initiate NMS but aggravate malignant catatonia [5].

Recent genetic studies [6, 7] reveal patterns of shared and distinct gene-expression alterations across psychiatric disorders and the data suggest that common polygenic variation underlies a substantial proportion of cross-disorder expression overlap [8]. The similarities and the possible differences in genetics may suggest a neuropathological and pathophysiological overlap in the background of the syndromes like ACS, NMS, catatonia, and DRMD. Consequently, we propose further genetic research in ACS and NMS to answer the questions raised by Hirjak et al. and by us. However, genetic research into ACS and NMS could be problematic as these phenomena are rare phenotypes.

In summary, we agree that ACS, genuine catatonia, and NMS should be included in a genetic UR on DRMD. Additional genetic research is, however, needed. Therefore, we suggest an update of

our UR when genetic research has been broadened on ACS and NMS.

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**COMPETING INTERESTS**

The authors declare no competing interests.

**ADDITIONAL INFORMATION**

**Correspondence** and requests for materials should be addressed to N.C.v.d.B.

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<sup>1</sup>Zon & Schild, GGZ Centraal, Amersfoort, The Netherlands. <sup>2</sup>Scheldezoo Pharmacy, 's Gravenpolder, The Netherlands. <sup>3</sup>Department of Psychiatry and Psychology, School for Mental Health and Neuroscience (MHeNS), Maastricht University Medical Centre, Maastricht, The Netherlands. <sup>4</sup>Department Psychiatry, Brain Centre Rudolf Magnus, Utrecht University Medical Centre, Utrecht, The Netherlands. <sup>5</sup>King's College London, King's Health Partners Department of Psychosis Studies, Institute of Psychiatry, London, UK. <sup>6</sup>Psychiatry at Arkin, Amsterdam, The Netherlands. ✉email: nadinevanderburg@yahoo.com

Received: 22 May 2021 Revised: 29 May 2021 Accepted: 23 June 2021  
Published online: 9 July 2021