Are Low P300 Amplitudes a Marker for Schizophrenia?

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Dear Sir,

The discussion of P300 amplitudes as a marker for schizophrenia has been open since the Seventies [1]. Reading the article by Rao et al. [2], I was surprised to see the very selective choice from the P300 literature in which the authors present their results. Since the first descriptions, it has been extensively shown that amplitudes do not satisfy the needs for a biological marker in schizophrenia because, at most, statistical differences with large overlaps between patients and normals [1, 3-6] or no group differences at all [7, 8] were found. The results of the Rao et al. [2] paper do not show a more clear-cut difference than previous reports and, therefore, do not add further support to the proposal to consider low P300 amplitudes as a marker for schizophrenia.

Two possible ways out of the dilemma regarding the meaning of low P300 amplitudes in schizophrenia have been proposed: First, subgrouping leads to more consistent results [9, 10]; second, clinical severity due to negative symptoms was significantly correlated with P300 amplitudes [8]. The latter result suggests that amplitudes are not a marker but rather a dimension with clinical relevance in schizophrenics. In a recent paper we showed that reference-dependent P300 amplitude measures at fixed electrode sites as applied in the Rao et al. [2] study are biased by interactions with topographical asymmetries [11] which have been repeatedly demonstrated in schizophrenic patients [6, 10, 12, 13]. Therefore, low amplitudes have to be interpreted very cautiously if no information about the topographical distribution of the P300 field is available.

After more than two decades of P300 research in schizophrenia, the P300 amplitude issue should be considered much more in detail than has been done in this paper. In particular, leaving some methodological shortcomings aside, it is a pity that the body of more recent research has been almost completely ignored. We are convinced that P300 research in schizophrenia is still exciting and promising, however, we wish to point out that the publication of new results requires taking account of the evolutions in the field.

References


Pfefferbaum A, Ford JM, White PM, Roth WT: P3 in schizophrenia is affected by stimulus modality, response requirements, medication status, and negative symptoms. Arch Gen Psychiatry 1989;46:1035-1044.


