Reviewer’s report

Title: Functional Abnormalities in the Cortical Processing of Sound Complexity and Musical Consonance in Schizophrenia: Evidence from an Evoked Potential study

Version: 1 Date: 12 February 2013

Reviewer: Derek Tracy

Reviewer’s report:

Functional and structural differences in the temporal lobes – especially the STG - have been well demonstrated in the brains of people with schizophrenia, and are hypothesised to at least partially underlie pathophysiological processes such as auditory verbal hallucinations. Less work has explored specific perceptual differences between those with schizophrenia and healthy controls in the processing of musical sounds. This work looked at evoked auditory potentials in response to intervals and chords of varying complexity and demonstrated abnormalities of processing in those (n=12) with schizophrenia, particularly to consonant (as opposed to dissonant) sounds, compared to matched controls.

Pathophysiology of the temporal lobes and STG are well established findings, including P3 amplitude in evoked potential studies. There is novelty to this study insofar as most electrophysiology studies focus on modestly simple sound paradigms rather than the complexity of full musical chords.

Given the task explores complex tonal and pitch variations in music it would be interesting for future work to compare participants that do not speak a tonal language such as the Chinese languages, though this was not the task of this piece of research, especially as prosodic differences between those speaking tonal and non-tonal languages has previously been demonstrated.

The task paradigm appears reasonable for the authors’ stated aims, with a well-defined question and appropriate methodology. The results appears statistically sound.

The results demonstrate abnormalities in N1 and P2 amplitudes. However the N1 abnormality is a reasonably well-established finding, albeit in typically more simplistic acoustic paradigms, and the study’s main strength is the use of a more complex test paradigm in adding to the existing data on temporal lobe deficits in those with schizophrenia.

My major comment is that the study might not be of broad enough interest to the readership of the journal BMC Psychiatry and better suited to a more neuroscience-based journal.

Level of interest: An article whose findings are important to those with closely related research interests
Quality of written English: Acceptable

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

Declaration of competing interests:

I declare that I have no competing interests