Chromosome 22q11 deletion and brain structure

Van Amelsvoort *et al* (2001) report characteristic brain changes in 10 adults with velo-cardio-facial syndrome (VCFS) and 13 matched controls. The study represents an important contribution, as it is the first quantitative structural neuroimaging investigation that focuses on affected adults. The sample includes individuals with and without schizophrenia, thereby allowing generalisation to the larger population of adults with deletion 22q11.

In common with other investigations of subjects with neurogenetic disorders, the small sample size limits statistical power for detecting neuroanatomical differences. Null results have been interpreted and have been contrasted with a finding from our study (Eliez *et al*, 2000), a finding that may have been misunderstood. Specifically, the authors state that their observation of no volumetric changes in the frontal lobe among adults with VCFS is in contrast to our observation of frontal lobe abnormalities in children and that this discrepancy might indicate "delayed frontal lobe maturation which is detectable as differences in total frontal volume in childhood but subsequently normalises somewhat in adulthood . . .". This interpretation implies that we found smaller frontal lobe volumes. While absolute volumes of the frontal lobe volumes were indeed smaller, adjusted frontal lobe sizes were in fact larger after statistically covarying for total brain volume, suggesting relative preservation of this structure. Preservation of frontal regions has been indicated in another recent study (Kates *et al*, 2001) reporting larger adjusted frontal lobe volumes and is potentially consistent with the voxel-based comparisons in the van Amelsvoort *et al* study, which found increased grey matter density in this region.

Two additional findings are of interest. The reported reduction in cerebellar volume is consistent with results of other recent studies (Eliez *et al*, 2000, 2001*a*), and the observed decrease in temporal lobe grey matter density among adults is in accordance with our finding of an inverse correlation between age and temporal lobe volume among affected children (Eliez *et al*, 2001*b*).

Collectively, findings from the aforementioned neuroimaging studies that rely on samples of differing age groups create an emerging picture of brain development in deletion 22q11 and will contribute to an increased understanding of VCFS as a genetically mediated subtype of schizophrenia.

Eliez, S., Schmitt, J. E., White, C. D., *et al* (2000) Children and adolescents with velocardiofacial syndrome: a volumetric MRI study. *American Journal of Psychiatry*, **157**, 409–415.

—, —, —, *et al* (2001*a*) A quantitative MRI study of posterior fossa development in velocardiofacial syndrome. *Biological Psychiatry*, **49**, 540–546.

—, Blasey, C. M., Schmitt, E. J., *et al* (2001*b*) Velocardiofacial syndrome: are structural changes in the temporal and mesial temporal regions related to schizophrenia? *American Journal of Psychiatry*, **158**, 447–453.

Kates, W. R., Burnette, C. P., Jabs, E. W., *et al* (2001) Regional cortical white matter reductions in velocardiofacial syndrome: a volumetric MRI analysis. *Biological Psychiatry*, **49**, 677–684.

van Amelsvoort, T., Daly, E., Robertson, D., *et al* (2001) Structural brain abnormalities associated with deletion at chromosome 22q11. Quantitative neuroimaging study of adults with velo-cardiofacial syndrome. *British Journal of Psychiatry*, **178**, 412–419.

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Light therapy for seasonal affective disorder: a type II error

Wileman *et al* (2001) evaluated bright white *v.* dim red light therapy for seasonal affective disorder in primary care and reported no significant difference in the proportions of responders in either group. Working on the basis of small trials having a large type II error, the group size for each group can be estimated. For most statistical tests, tables are available that show the power of the test to detect specified differences for a given α and sample size, as well as tables that show the required sample size to achieve selected power for specified difference and given α (Machin & Campbell, 1987; Cohen, 1988). In designing a clinical trial, we should select the power $1-\beta$ to be at least 0.80, so that there is a chance of one in five or less of missing an important difference between treatments.

The differences in response rates between the two groups even using the broad remission criterion was 16.9%. To detect this difference at a significance level α=0.05, power 80%, 160 patients are required in each group (Freeman & Tyrer, 1992). However, only 57 patients in total were enrolled by Wileman *et al*. This reduced the power of the tests to about 20% and strongly suggests a type II error. It would therefore be misleading to conclude that bright white light is not associated with greater improvement.

Cohen, J. (1988) *Statistical Power Analysis for the Behavioral Sciences* (2nd edn). Hillsdale, NJ: L. Erlbaum.

Freeman, C. & Tyrer, P. (eds) (1992) *Research Methods in Psychiatry* (2nd edn), p. 52. London: Gaskell.

Machin, D. & Campbell, M. J. (1987) *Statistical Tables for the Design of Clinical Trials*. Oxford: Blackwell Scientific.

Wileman, S. M., Eagles, J. M., Andrew, J. E., *et al* (2001) Light therapy for seasonal affective disorder in primary care. Randomised controlled trial. *British Journal of Psychiatry*, **178**, 311–316.

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Pragmatic approach to the dangers of cannabis use

I note the recent flurry of papers on the dangers of cannabis use (Ashton, 2001; Johns, 2001; MacCoun & Reuter, 2001; Robson, 2001). As a clinician working with alcohol and drug users for 18 years, I find my mind strained by the disparity between what I read and what I see. Cannabis is almost universally used by my patients, yet only rarely can significant problems be attributed to its use. This is not to say that squirrel monkeys locked in cages with nothing to do but get stoned do not seem addicted to Δ^9-tetrahydrocannabinol (THC) (Tanda *et al*, 2000; contrast with Peele, 1990). But what does that mean to humans living in complex interconnected worlds? We read that cannabis use "generally provokes relapse" in schizophrenia (Johns, 2001) but the commonest cause of relapse is schizophrenia itself. Many people choose to reduce symptoms, feel more in control or stay numb through drug use, irrespective of what we say or fear. Generally, as symptoms improve with more effective treatments, and as life's chaos subsides, alcohol, tobacco and other drug use declines or stops.

A crucial point many do not concede is that people will and do use cannabis, at an increasing frequency in most Western countries, and that dire warnings in the face of growing public acceptance will achieve

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