Brain Activity May Drive Impulsivity in Bulimia

BY MARY ANN MOON

Women with bulimia nervosa appear to have deficient activity in frontostriatal regulatory circuits of the anterior cingulate cortex, as assessed on functional MRI.

This subnormal activation likely contributes to their greater than normal impulsivity in eating and other behaviors, said Dr. Rachel Marsh and associates at the New York State Psychiatric Institute, New York (Arch. Gen. Psych. 2009;66:51-63).

They assessed 20 women recruited from an eating disorders clinic and 20 healthy control subjects matched for body mass index and age (average, 26 years). All underwent fMRI imaging while performing the Simon spatial incompatibility task to compare differences between the group in brain activation patterns associated with self-regulatory control.

The bulimia patients made significantly more errors on the task than did controls, and their accuracy decreased further over time. Those with the most severe bulimia symptoms made the most errors.

Compared with controls, bulimia patients showed deficits in the activation of circuits in the brain's left side (the inferolateral prefrontal cortex and the left lenticular nucleus) and in the right side (the ventral and dorsal anterior cingulate cortex, the putamen, and the caudate nucleus).

"Deficient cortical activation likely accounted for their more impulsive, error-prone performances, compared with controls," the authors wrote. "These deficits may be caused by previously reported decreases in serotonin metabolism in frontal cortices in [bulimics]."

The differences between the groups were independent of IQ, depression, and ADHD rating instruments. ■