Comment: Toward a physiology of eating disorder in frontotemporal dementia

Abnormalities of eating behavior, of which there are a variety, are signal features of frontotemporal dementia (FTD), as exemplified by their stipulation in contemporary diagnostic criteria. The study by Ahmed et al.[1] examines physiologic correlates of eating disorder in behavior-variant FTD (bvFTD) and semantic-variant primary progressive aphasia (svPPA) by analyzing linkages among body mass index (BMI), peptide hormones, and hypothalamic volumes.[1] The contrasts with Alzheimer disease (AD) are informative, but more might have been learned from comparisons with counterparts who did not have an eating disorder.

The higher BMI values in bvFTD and svPPA (vs AD) were correlated with the high eating behavior scores and serum concentrations of leptin and Agouti-related peptide (AgRP). Eating behavior scores were not linked to peptide concentrations or hypothalamic volume, despite the bvFTD group's posterior hypothalamic atrophy. The regression models showed only that serum peptides explained 45% of the variance in BMI scores, and bvFTD 19% of the variance in eating behavior scores.

These findings, considered alongside established homeostatic functions, suggest that eating disorder in bvFTD, typically hyperphagia, relates to high concentrations of AgRP (whereas leptin elevations are responses to high BMI). The hypothalamic atrophy in bvFTD is intriguing. As other data suggest hypothalamic atrophy in bvFTD spares the neurons that produce AgRP,[2] linking loss of local inhibitory inputs to hyperphagia is plausible. The svPPA group did not have hypothalamic atrophy, seemingly a contradiction, but abnormally stereotyped eating is typical so extrahypothalamic mechanisms may be more pertinent.

This study provides impetus for studies of FTD eating disorder physiology. Future work might clarify effects of glycemic status, circadian rhythms, and other metabolic factors, and study neuroanatomical correlates by way of comparisons with counterparts who do not have an eating disorder.

1. Ahmed RM, Latheef S, Bartley L, et al. Eating behavior in frontotemporal dementia: peripheral hormones vs hypothalamic pathology. Neurology 2015;85:1310–1317.
2. Piguet O, Petersén Å, Yin Ka Lam B, et al. Eating and hypothalamus changes in behavioral-variant frontotemporal dementia. Ann Neurol 2011;69:312–319.

Chiadi U. Onyike, MD, MHS

From the Division of Geriatric Psychiatry and Neuropsychiatry, Johns Hopkins University School of Medicine, Baltimore, MD.

Study funding: No targeted funding reported.

Disclosure: C.U. Onyike serves/has served a consultant to Eli Lilly, Pfizer, and clinical investigator in trials sponsored by Forest Pharmaceuticals, GE Health care. and TauRX. Go to Neurology.org for full disclosures.