ABSTRACT

**BACKGROUND:** Craving sweets is common in patients with Parkinson’s disease (PD), but this symptom has not been systematically studied. **METHODS:** Patients with idiopathic PD and unaffected spouses of PD patients completed a Food Frequency Questionnaire (FFQ) for sweet foods they eat now, and identified if they felt craving for any of them. If yes, they completed a Food Craving Questionnaire (FCQ). All subjects answered a Symptom Check List focusing on depression, anxiety, and obsessive-compulsive disorder, and completed the 36-Item Short-form Health Survey (SF 36) and taste threshold testing for sweet, salty, sour, and bitter substances. We also completed an FFQ and FCQ relating to symptoms before they started taking PD dopaminergic medication. Demographic data was recorded. **RESULTS:** 62 patients (mean age 64 yrs, 35 male) and 23 controls (mean age 64 yrs, 13 male) completed the FCQ and SF 36. Mean PD duration was 7.1 yrs (SD 4.9 yrs), mean UPDRS I-3 score was 28.7 (SD 12.2), and mean Hoehn &Yahr stage was 1.9 (SD 0.6). Of the 85 subjects, 32 (38%) patients and 9 (39.1%) controls identified themselves as cravers (p=0.30). Of those stating they craved sweets, 11 PD patients (34%) scored over the 75th percentile on the FCQ, whereas 5.9; SD 0.5 did but only 1 control (11.1%) scored over the 75th percentile (p=0.017). No correlation was found between craving and age, gender, levodopa equivalents, depression, anxiety, OCD, Q-SIT scores, or craving before PD diagnosis. Thresholds for all tastes were similar between PD patients and controls, all subjects had relatively preserved sense of sweet for sweets, and Q-SIT scores were lower for all PD patients than controls (p=0.005). **CONCLUSIONS:** This pilot study demonstrates that a higher proportion of PD patients identified themselves as craving sweets than controls, and a higher proportion scored over the 75th percentile on the FCQ. Several of taste and smell did not affect craving. Langer studies are needed to further define craving sweets in PD and to correlate craving with other behaviors such as obsessive-compulsive disorder. Craving for sweets in PD is an expression of dopamine-mediated reward system.

**RESULTS**

**INTRODUCTION**

PD patients have been known to crave sweets, but this has not been systematically studied.

**METHODS**

To determine if PD patients had hyperic responses to pleasant and unpleasant stimuli, Slawson-Zacek et al (2009) studied their taste responses.

- No difference between PD patients and controls in the perceived pleasantness of sweet samples.
- No statistical significant difference in craving for sweets between the two groups based on a single item visual analog scale.
- PD patients had a lower taste threshold for sweet compared to controls.
- Olfactory deficits in PD may be compensated by enhanced taste reactivity.
- However, formal small and craving assessments were not performed with PD patients.
- There is an age-related decrease in the size of the olfactory bulb and other cell structures involved in smell, whereas there is an increase in concentration of taste receptor density with advancing age (Kimura et al, 2000).
- However, smell and taste senses are closely related, not least due to their strong similarity on olfactory sensations (Magez et al, 2005).
- Craving carbohydrates is closely linked to mood females are more likely to experience this phenomenon and it is more common associated with “negative” mood states (Chastain et al, 2002).
- 40% of PD patients experience mood disorders (Therse et al, 2002).
- A report of binge eating in PD patients after beginning a dopamine agonist described 7 patients who developed a compulsive type of eating, 3 of whom experienced food and sweet cravings (Kobal et al, 2000).
- Binge eating and craving resolved after discontinuation of the drug.
- Animal models of craving suggest implication of dopamine, serotonin, and glutamate in the accumbens (Pierrot and Sapolsky, 2000; Kalappa et al, 2002).
- **Degenerative changes in PD** and the nucleus accumbens occur in PD (Murray et al, 1990).
- **The aim of this study is to determine the prevalence of craving for sweets in our population of PD patients, and to determine if this phenomenon correlates with olfactory loss, taste loss, medications, or underlying affective disorder.**

**EXCLUSION CRITERIA:**
- Any patient seen at the Parkinson’s Disease Center and Movement Disorders Clinic and diagnosed with probable idiopathic PD according to the U.S. criteria (Gibbs et al, 1992) were asked to participate.
- Control subjects were comprised of spouses of PD patients.

**RESULTS (continued)**

**REFERENCES**