Fast Food, Phosphorus-Containing Additives, and the Renal Diet

Purpose of Study

Fast-food restaurants emphasize several aspects that are appealing to their customers such as taste, convenience, low cost, and the ability to tailor to personal preferences. This may provide an option with more ease over preparing and cooking meals at home, but the foods offered can be detrimental to a kidney-failure patient on dialysis. Choosing fast food is common among hemodialysis patients, but many of the foods are not fitting for their diets due to the sodium, potassium, phosphorus content, and being difficult to estimate the amount of phosphorus containing additives. The purpose of this study was to determine how many fast food options may be compatible with a renal diet.

Materials and Methods

Fast food chains in the Cleveland area were chosen if they had at least 10 restaurants in the area. The restaurant was considered a “fast-food” establishment if it met 2 of 4 criteria: a permanent board is provided to select and order food, customers pay for food before consumption, a self-service condiment bar is provided, and most main-course food items are prepackaged rather than made to order. Of the 15 food chains, some chosen were McDonald’s, Pizza Hut, Taco Bell, Dunkin’ Donuts, KFC, Wendy’s, Dairy Queen, and 8 similar businesses. Menus, ingredient lists, and nutrition facts were obtained from January to March of 2007. The analysis geared mainly towards entrees and side dishes, but excluded items eaten for dessert. The criteria for assessment, according to traditional criteria and to the presence of phosphorus-containing additives, of the menu items were developed by a panel of 4 renal dietitians. The guidelines for
the traditional criteria included: (1) <900mg of sodium for entrees, and <300mg of sodium for side dishes; (2) no dry beans, high-potassium fruits, or high-potassium vegetables listed as the first, second, or third ingredient; (3) no whole-grain flour listed as the first ingredient; and (4) a calcium content of <20% of the daily value. A menu item was considered to have phosphorus-containing additives if there was any substance on the ingredient list containing phosphate or polyphosphates.

Results
Eight hundred and four total entrees and 163 total side dishes were analyzed according to the criteria listed previously. Of the entrees, 52% were acceptable to the traditional criteria and only 16% were free of phosphorus-containing additives. Six fast food chains had more than 5 acceptable entrees, 6 chains had 1-5 acceptable entrees, and 3 chains had no acceptable entrees that met both criteria including Dairy Queen, Taco Bell, and Wendy’s. Of the side dishes, 23% were acceptable according to the traditional criteria and only 17% were also free of phosphorus-containing additives. No chain had more than 5 acceptable side dishes, 10 chains had 1-5 acceptable side dishes, and 5 chains had no acceptable side dishes. Among entrees and side dishes, the most common acceptable items were baked products and chicken products.

Conclusions
Although eating at fast-food restaurants is popular among kidney failure patients, as well as the public in general, the foods served at these establishments are not suited for those who follow a renal diet. Even though the convenience, tastiness, affordability, and high caloric density for fast food may help increase dietary intake among kidney failure patients, this study found that only
half of the fast-food entrees and one-fourth of side dishes were compatible with the diet specific for patients on hemodialysis according to criteria set forth considering the content of sodium, potassium, and naturally occurring phosphorus. However, only one-sixth of the entrees and side dishes do not have any phosphorus-containing additives. This makes the selection extremely limited even for those patients who are highly-knowledgeable about the foods appropriate for their diet. To make matters worse, many fast-food chains do not even have nutrition facts or ingredient lists available to their customers.
Article Critique

Population Selection
The choice of fast-food chains chosen for the study was very selective. The restaurants were all in a single geographic region, the greater Cleveland area, they had to have more than 10 locations just in the area, as well as meet the criteria specified by the researchers as being a “fast-food chain”. Because of this limitation, only 15 chains were chosen to be analyzed in the study.

Methodology
The items chosen to be analyzed included main entrees, side dishes, breakfast entrees, and breakfast side dishes. Among the items not included in the analysis included desserts, beverages, condiments, spreads, limited-time offers, or regional items. Fast-food chains frequently change the composition of their items and add new ones to their menu, so this study represents the items offered at that specific time.

Reported Results
The acceptability of the item also depended on the standard criteria created by the renal dietitians. The content of sodium, potassium, and phosphorus allowable in a menu item may not be suitable for all renal diets. Many patients have specific dietary needs that are stricter than the comparable criteria.

Validity
When deciding phosphorus content from additives, the researchers assumed that any fast-food item with a phosphorus-containing additive was incompatible with renal diets; however they were unable to calculate the actual phosphorus content. The percentages for the reported acceptable side dishes may be skewed due to the fact that 2 of the restaurants did not offer any side dishes in the first place, but the researchers did not excuse those fast-food chains while
reporting how many chains offer acceptable dishes. Because of the items excluded from the study such as condiments and spreads, there may be menu items that may have been considered acceptable for a renal diet without those items, but may be an unacceptable item with the addition of those options; in which many restaurants usually include in an entrée or side dish without the knowledge of the customer.

**Practical Application**

While the results of this study may help dialysis patients choose more kidney-friendly foods when they choose to eat at a fast-food restaurant, there are several limitations to this knowledge. Many chains do not offer nutrition facts or ingredient lists and the presence of a phosphorus-containing additive does not allow patients to estimate the actual phosphorus content. Because of this, even the most knowledgeable patients would be out of luck. If the information is available to the customer, it would take a great amount of time, energy, and nutrition comprehension to understand the information.

**Citation**