



THE 'MUFFIN TEST'—AN ACCEPTABLE ALTERNATIVE TO AN OGTT TO DETECT IMPAIRED GLUCOSE TOLERANCE (IGT) – PRELIMINARY FINDINGS FROM THE KEEPS STUDY.

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Introduction: IGT is currently diagnosed by fasting glucose levels (FPG > 110 mg/dl) or a 75-g OGTT (2-hr glucose of 140-199 mg/dL).⁽¹⁾ A "Cookie Test" performed in lieu of an OGTT correctly identifies IGT and dyslipidemia and is better tolerated.⁽²⁾ In recruitment for the KEEPS (Kronos Early Estrogen Prevention Study) Trial, a "Muffin Test-MT" was used to examine glucose metabolism in a sample of recently menopausal women. We hypothesized that a standard breakfast food item provides a more physiologic carbohydrate (CHO) challenge than a concentrated glucose solution.

Methods: Subjects: 47 women aged 42-58, <36 months post-menopause, recruited for KEEPS. After a 10-hour fast, following blood draw, participants were given a muffin (60-g CHO). 2-hour finger stick glucose, height and weight were assessed. A subset (10) underwent OGTT.

Results: No one met FPG criteria for diabetes mellitus (>125 mg/dL). IGT was seen in 7/47. Baseline characteristics such as age, BMI, and lipoproteins did not differ between the 37 KEEPS participants who did not undergo detailed metabolic assessment and the 10 who did. Significant correlations were observed between FPG, 2-hr post OGTT and MT glucose ($p < 0.05$). On multivariable linear regression, adjusting for BMI and CHO, an increase in FPG by 1 mg/dL was related to a 1.38 mg/dl increase in 2-hour post MT glucose ($p < 0.001$); this association was exaggerated in overweight ($BMI > 25 \text{ kg/m}^2$) women (coefficient 1.62, $p < 0.001$). No relationship was noted between baseline lipids and post MT or OGTT glucose levels. 2-hr OGTT and MT glucose levels were comparable ($p = 0.08$).

Conclusions: The prevalence of IGT in a multiethnic cohort of early postmenopausal women enrolled in our study center was almost 15% (7/47). FPG alone would have missed 43% of these cases (3/7). In this preliminary study, MT demonstrated 100% sensitivity and specificity for diagnosing IGT in comparison to the gold standard OGTT. The post MT excursion in glucose values was exaggerated in heavier women.

REFERENCES:

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