MUSC Health
Medical University of South Carolina

Mixed-Meal Tolerance Testing Protocol for Outpatient Testing
Endocrinology Fellowship Program

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BACKGROUND

The Mixed-Meal Tolerance Test (MMTT) is the gold standard measure of endogenous insulin secretion for evaluation of post-prandial hypoglycemia. It is a technique that evaluates insulin sensitivity and β-cell function.

Although routinely used in the evaluation, there are no precise instructions for health care providers regarding sampling interval, assay duration, or test meal composition. This poses a challenge which, stemming from staff unfamiliarity, can lead to diagnostic inaccuracies, and wasted time and expenses.

In an effort to improve the diagnostic accuracy of MMTT in our clinics, we propose introducing a standardized MMTT protocol for MUSC Endocrine clinics.
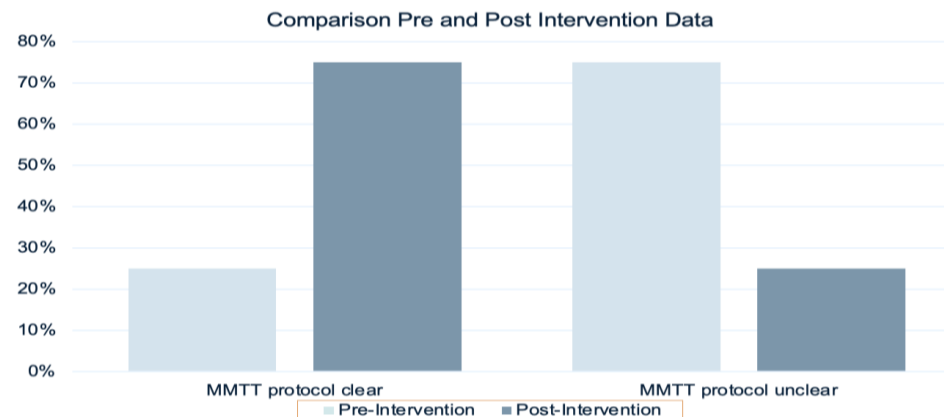
AIM STATEMENT

Standardizing a MMTT protocol in the MUSC Endocrinology clinics with a >75% improvement

METHODS/INTERVENTION

- Pre-intervention : In September 2022 we obtained baseline questionnaire assessing each Endocrinology Clinical Nurse staff on their comfortability with performing the MMTT.

- Intervention : Created a standardized MMTT protocol that could be accessed by all staff using Epic dot phrase. We provided education to the Endocrinology Clinical Nurse staff on the MMTT protocol.

- Post-intervention : In February 2023 we obtained a follow-up questionnaire assessing each Endocrinology Clinical Nurse staff on their comfortability with performing the MMTT after receiving education on the new standardized MMTT protocol.

RESULTS

Percentage	Pre- Intervention	Post- Intervention
MMTT protocol unclear	75%	25%
MMTT protocol clear	25%	75%

Comparison Pre and Post Intervention Data

CONCLUSIONS

In our analysis of pre- and post-intervention data, we note that at baseline most Endocrinology Clinical Nurse staff felt the need for more clear instruction, and there was noted to be significant improvement in staff perceptions towards MMTT protocol after intervention.

We anticipate that with continued education of Endocrinology Clinical Nurse staff that there will be an increase in comfortability in performing MMTT, which will improve diagnostic yield and minimize the errors.

BARRIERS:

- Frequency of educational sessions for providers
- Complexity and several variables at each step in MMTT protocol.

NEXT STEPS

Continue educational sessions to clinic staff to minimize errors

Create therapy plan in Epic

Implement for inpatient use