

BACKGROUND

- Therapeutic inertia is the failure to timely adjust treatment when therapy goals are not met.
- Prolonged hyperglycemia is associated with an increased risk of new or progressed microvascular and macrovascular complications.
- Previous research showed the median time to treatment intensification after an above target A1C was > 12 months (range 0.3 months to 7 years).
- The American Diabetes Association has launched the Overcoming Therapeutic Inertia initiative to address causes and factors of delays in effective treatment implementation, and recommends that medical practices and health systems self-assess how often therapeutic inertia is occurring.

OBJECTIVE

- To evaluate the timeliness of follow-up and care plan changes in people with type 2 diabetes and an elevated A1C receiving primary care in a Federally Qualified Health Center (FQHC).
- To identify characteristics of treatment intensification.

METHODS

Study Design

- Cross-sectional retrospective observational study design was utilized.
- Protocol was approved with exempt status by the Southern Illinois University Edwardsville Institutional Review Board.
- Utilized the electronic health record reporting system to identify patients with a qualifying A1C receiving care at 3 SIHF Healthcare locations.
- Reviewed records of 177 identified patients to determine study eligibility.
- Data reporting period: 5/2018 – 3/2020.

Inclusion Criteria

- Age: 18 to 89 years
- Diagnosis of type 2 diabetes
- A1C \geq 9% from 5/1/2018 to 4/30/2019
- Under the care of a primary care provider at SIHF Healthcare O’Fallon, West Belleville, or Belleville Family health centers.

Exclusion Criteria

- Established with an endocrinologist or clinical pharmacist for diabetes management
- Pregnancy

Study Measure

- Primary outcomes: Percentage of patients receiving an office visit addressing diabetes management within 3 months and a care plan change within 12 months of the entry A1C.
- Secondary outcomes: Number of office visits addressing diabetes and A1C monitoring in 1 year, time to treatment intensification, and type of therapy intervention.

Data Analysis

- Descriptive statistics were utilized to analyze data in Excel.

RESULTS

Table 1. Demographics: Overall

| Characteristic | Overall, N = 110 N (%) or Mean (SD) |
|------------------------------------|--|
| Age in years, mean (SD) | 51.7 (10.7) |
| 20-29 | 0 (0) |
| 30 - 39 | 19 (17.3) |
| 40 - 49 | 25 (22.7) |
| 50 – 59 | 45 (40.9) |
| 60 - 69 | 14 (12.7) |
| \geq 70 | 7 (6.4) |
| BMI kg/m ² , mean (SD) | 36.4 (9.4) |
| Gender, N (%) | 56 (50.9) |
| Male | 54 (49.1) |
| Female | 54 (49.1) |
| Race, N (%) | 43 (39.1) |
| White | 63 (57.3) |
| Black or African American | 3 (2.7) |
| Hispanic/Latino | 1 (0.9) |
| Others | 1 (0.9) |
| Insurance, N (%) | 11 (10.0) |
| Medicare | 51 (46.4) |
| Medicaid | 11 (10.0) |
| Dual (Medicare/Medicaid) | 22 (20.0) |
| Commercial | 15 (13.6) |
| No Insurance | 51 (46.4) |
| A1C level, N (%) | 59 (53.6) |
| \geq 9% and 10% | 59 (53.6) |
| \geq 10% | 59 (53.6) |
| Co-conditions, N (%) | 88 (80) |
| Hypertension | 7 (6.4) |
| Heart Failure | 18 (16.4) |
| Cardiovascular Disease | 8 (7.3) |
| Cerebrovascular Disease | 2 (1.8) |
| Nephropathy/Chronic Kidney Disease | 22 (20) |
| Peripheral Neuropathy | 11 (10) |
| Autonomic Neuropathy | 1 (0.9) |
| Retinopathy | 9 (8.2) |
| Peripheral Vascular Disease | |

Table 2. Characteristics of Treatment Intensification

| Characteristic | N (%) or Mean (SD) |
|---|--------------------|
| Completed an office visit addressing diabetes within 3 months of entry A1C, N (%) | 81 (73.6) |
| Mean (SD) office visits addressing diabetes in 1 year | 3.1 (1.7) |
| Number of repeat A1C tests in 1 year, mean (SD) | 1.7 (0.9) |
| Number of medications changed, mean (SD) | 0.6 (1.2) |
| Medication dose adjustments, N (%) | 67 (60.9) |

RESULTS

Figure 1. Time to Treatment Intensification

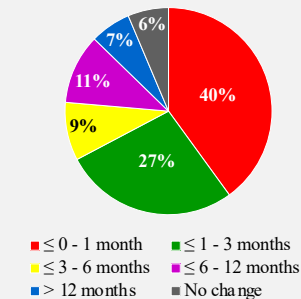


Figure 2. Type of referral during study period

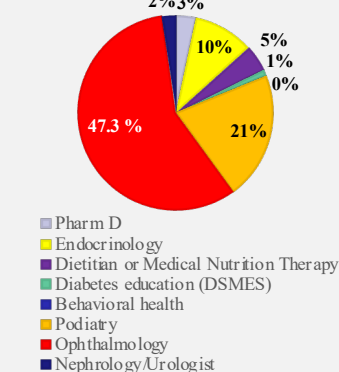
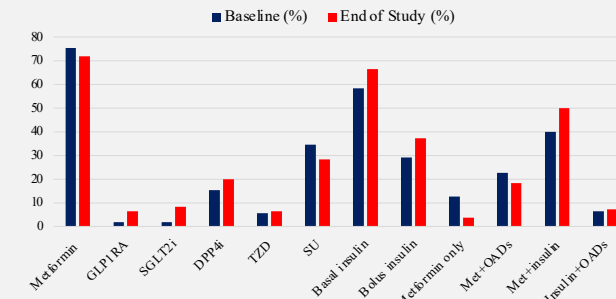


Figure 3. Medications Utilized



GLP1RA=glucagon-like peptide-1 receptor agonist, SGLT2i=sodium-glucose cotransporter-2 inhibitor, DPP4i=dipeptidyl-peptidase 4 inhibitor, TZD=thiazolidinedione, SU=sulfonylurea, Met=metformin, OADs=oral antidiabetic

LIMITATIONS

- Potential for missing or miscategorized data.
- Causes of therapeutic inertia cannot be determined.
- Changes in glycemic outcomes over the study period were not assessed.

CONCLUSION

Failure to implement a diabetes care plan change within 12 months of the elevated A1C occurred in 13% of patients. Initiatives to improve follow-up A1C assessment, explore prescribing patterns and assess effectiveness of medication optimization, identify patient groups who may be experiencing delays in therapy intensification, and evaluate for contributing factors of therapeutic inertia are needed.