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Background

The American Diabetes Association has proposed guidelines aimed at providing comprehensive care to patients with diabetes. These guidelines encompass screening for hyperlipidemia, renal disease, diabetic neuropathy, and cardiovascular risk, recommended statin therapy, hemoglobin A1c (A1c) monitoring, and vaccinations(1-5). Longitudinal studies have demonstrated poor adherence is linked to increased risk for all-cause, cardiovascular, and cancer mortality, cardiovascular events, and renal disease(6-8). Studies have also demonstrated increased adherence is associated with a lower risk of hospitalization. Despite these clear benefits, adherence to guidelines is variable, with studies revealing full adherence as low as 4.8% and variable adherence for individual metrics(7-10). In studies examining low-income, urban populations, these numbers are even lower(10). Given the demonstrated benefits of full adherence to ADA guidelines, improving adherence can lead to better patient outcomes, and thus, this area is of particular importance in primary care settings. Our study aimed to evaluate resident adherence to the ADA guidelines in caring for patients with diabetes in the Internal Medicine Ambulatory Care Clinic of University Hospital.

Methods

A retrospective chart review was conducted for patients age 30-75 with Type I or Type II diabetes mellitus who were seen in the Internal Medicine Resident Ambulatory Care Clinic between August 1st and August 30th 2019. Fifty charts were selected for review using an online randomizer. The quality metrics collected were frequency of A1c monitoring, yearly lipid profile measurements, yearly urine microalbumin measurements, yearly podiatry and ophthalmology evaluation/referral, nutrition referral, yearly ASCVD risk calculation, appropriate statin therapy, yearly influenza vaccination, hepatitis B vaccination, and pneumococcal vaccination status. Data was collected in the RedCap database for analysis.

Metrics assessed

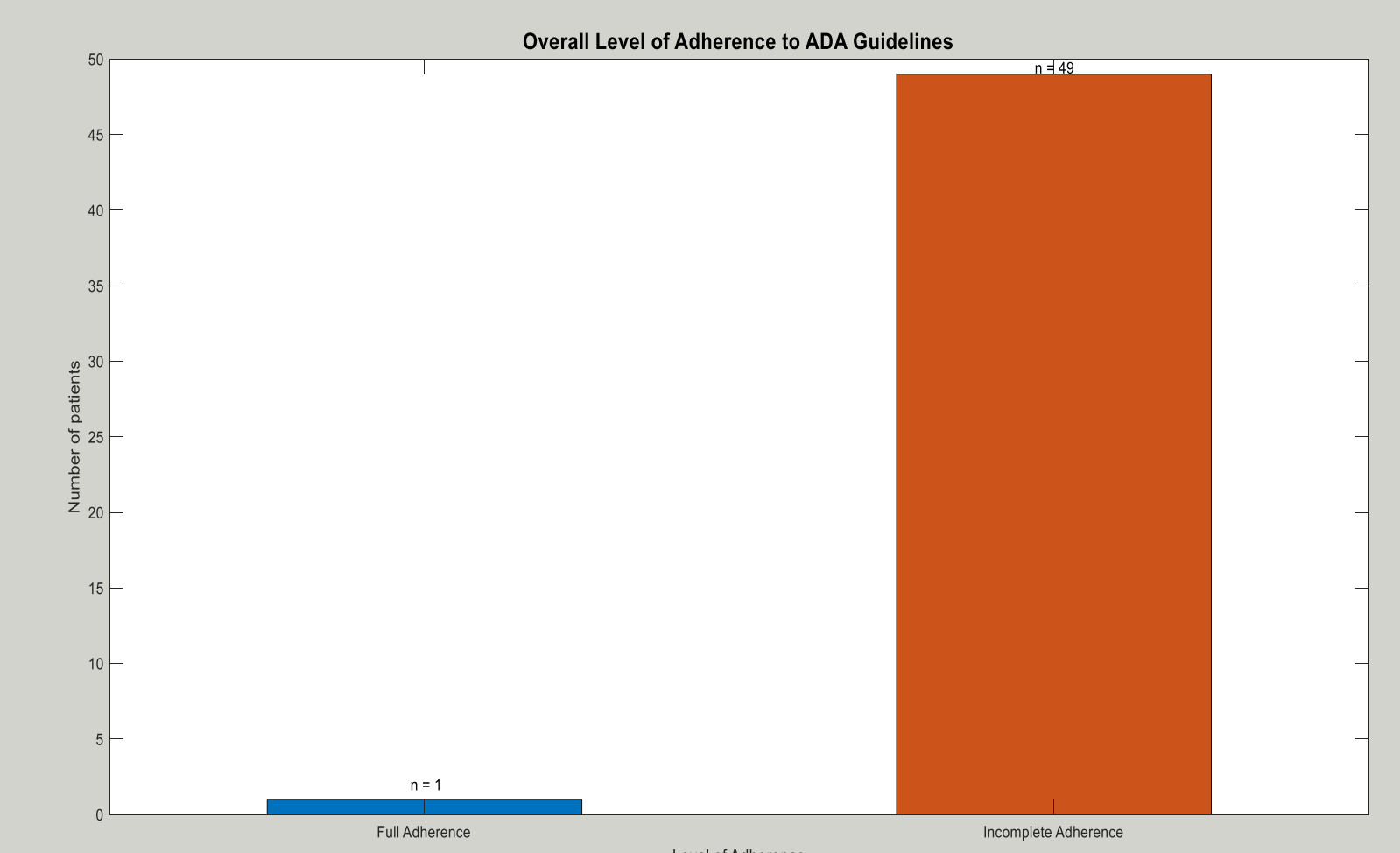
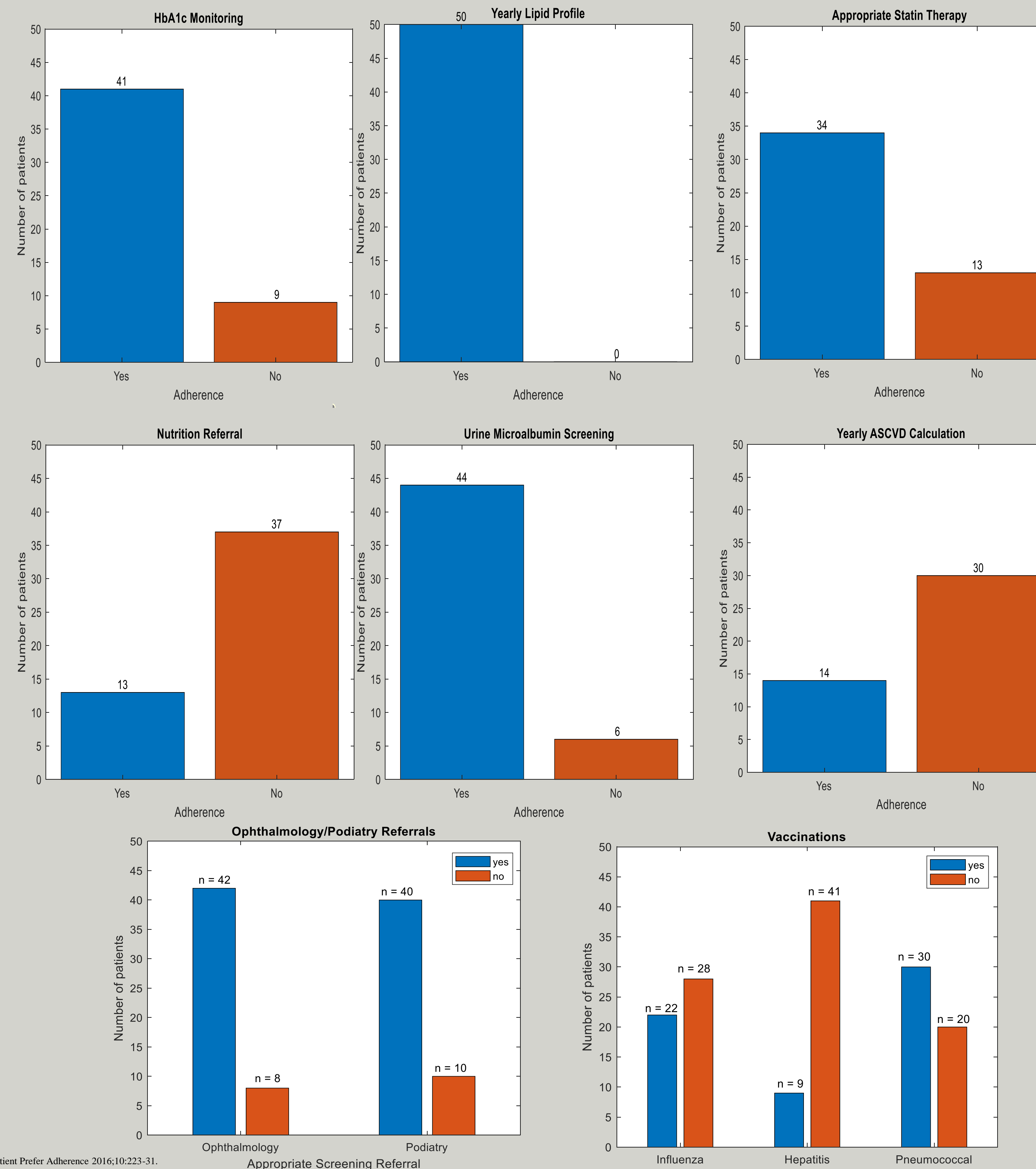
- Appropriate frequency of A1c monitoring
- Yearly lipid profile measurements
- Yearly urine microalbumin/creatinine measurements
- Yearly podiatry and ophthalmology evaluation/referral
- Nutrition referral
- Yearly ASCVD risk calculation, Appropriate statin therapy
- Yearly influenza vaccination
- Hepatitis B vaccination
- Pneumococcal vaccination status

Results

Fifty patients were selected for chart review. Appropriate HbA1c monitoring occurred in 82% (41/50), lipid profile measurements in 100% (50/50), urine microalbumin screening in 88% (44/50), podiatry referrals in 80% (40/50) patients, ophthalmology referrals in 42/50 (84%), nutrition referrals in 26% (13/50), ASCVD calculation in 31.8% (14/44 patients, 6 did not meet age criteria for ASCVD calculation), appropriate statin therapy in 72.3% (34/47 patients, 3 did not meet criteria for statin therapy), influenza vaccination in 44% (22/50), hepatitis B vaccination in 18% (9/50), and pneumococcal vaccination in 60% (30/50) of patients. Only 2% (1/50) appropriately met all guideline recommendations.

Conclusions

Based on this study, adherence to individual metrics is variable, but full adherence to all guidelines is very low. However, it is important to recognize that previous studies have not measured all nine of the metrics included in this study. Additionally, one limitation of this study is that only a single visit was included for evaluation. Evaluation over multiple visits may be necessary to better establish true levels of adherence. A potential solution to increase compliance would be to update the diabetes SmartText within the Epic EMR to include all metrics and mandate use of the SmartText among residents. Additionally, patients can be given a diabetes checklist card to carry with them to follow-up appointments, which can be reviewed with the patient to find missing components. This would allow the patient to be their own advocate and may increase patient compliance to testing as well.



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