

Prescription Medication Patterns and Polypharmacy Among Chinese Patients With Diabetes: A Retrospective Cohort Study

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Background

- In recent years, the global prevalence of diabetes has been steadily increasing, with the rate of increase in diabetes prevalence in low- and middle-income countries being significantly higher than that in high-income countries.
- China has the highest number of diabetes patients in the world. According to epidemiological data from the International Diabetes Federation (IDF), the number of diabetes patients in China increased from 90 million in 2011 to 140 million in 2021, an increase of 56%.
- As new medications become more widely available, clinical pharmaceutical practice guidelines are adopted, the patterns of medication use among patients with diabetes may have shifted over time.
- There are few articles that focus on the overall medication patterns of diabetes patients in China.

Objective

- To describe patterns of prescription medication use and polypharmacy among Chinese patients with diabetes.

Methods

- Data were extracted from the Yinzhou Health Information System, a regional population electronic health records data platform (2015.1.1-2021.10.1) with high population coverage (98%) in Yinzhou, Ningbo, China.
- Patients were included if they had at least two outpatient diagnoses of diabetes with an interval of ≥ 30 days between diagnoses or one inpatient diagnosis of diabetes, with the earliest date fulfilling diagnostic criteria as the enrollment date.
- Patients were followed until death or the last prescribing record within the study timeframe.
- Patients with gestational diabetes were excluded.
- Polypharmacy was defined as the use of ≥ 5 medications.

Results

- A total of 99,619 patients were included, with mean age of 61.6 years and 47.62% being male.
- The median (interquartile range) follow-up duration was 3.7 years (1.83, 5.58).
- The mean number of medications used per month for patients with diabetes increased from 2.9 at enrollment to 4.0 at sixth year of follow-up.
- The prevalence of polypharmacy increased from 22.5% to 37.4%, and the proportion using ≥ 10 medications increased from 2.7% to 6.0%.

Results

- The number of medications was higher among ≥ 65 years adults: with a mean of 4 medications per month and prevalence of polypharmacy increasing from 28.6% to 45.9%.
- The most commonly used medications were glucose-lowering agents (prevalence 86.4%), oral traditional Chinese medicines (73.0%), anti-infective drugs (59.2%), and antihypertensive medications (58.5%).
- The prevalence of anti-infective, antihypertensive, and dermatologic drugs increased over follow-up.

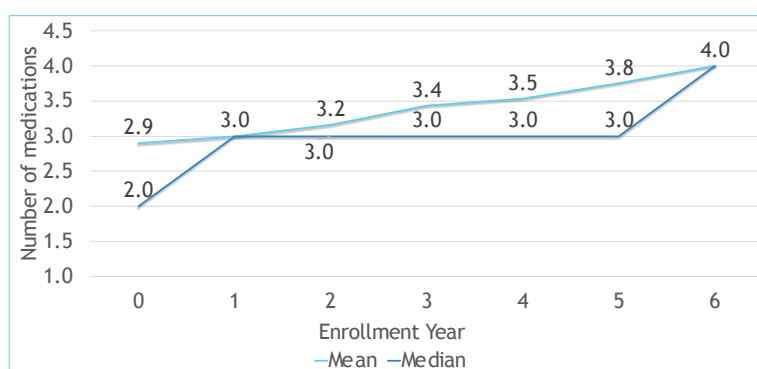


Figure 1 Trends in number of medications used among patients with diabetes

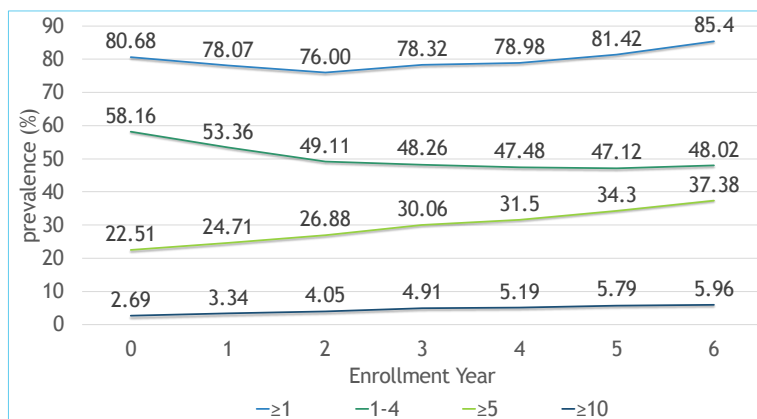


Figure 2 Trends in prevalence of use by number of medications

Conclusion

- Using longitudinal data from a district in China, we showed that patients with diabetes had high medication use, especially among older adults.
- In addition to glucose-lowering medication, anti-infective, antihypertensive and traditional Chinese medicine were commonly used.
- The growing medication burden among patients with diabetes warrants attention about appropriate use of medication in this population.

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