

# Rising Medication Burden in Adults With Type 1 Diabetes: Real-World Evidence From China

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## INTRODUCTION

- **Type 1 diabetes mellitus (T1DM) is a lifelong chronic disease requiring continuous insulin therapy and long-term clinical management.** With increasing survival and longer disease duration, adults with T1DM may require treatment not only for glycemic control but also for diabetes-related complications and other chronic conditions.
- **The accumulation of comorbidities and additional therapies may substantially increase medication burden over time.** This can result in polypharmacy, which may complicate treatment regimens, increase the risk of drug-related problems, and create additional challenges for long-term medication management.
- **Although polypharmacy has received increasing attention in diabetes care, most available evidence has focused on type 2 diabetes or older populations.** Longitudinal evidence describing how medication use and polypharmacy evolve among adults with T1DM, particularly in China, remains limited.
- **Understanding long-term medication patterns in T1DM is important for identifying emerging treatment burden and informing medication review and optimization.** Therefore, this study examined longitudinal changes in medication use and polypharmacy among adults with T1DM using a regional real-world healthcare database in China.

## METHODS

- We conducted a retrospective observational cohort study using the Yinzhou Regional Health Care Database.
- Adults ( $\geq 18$  years) with diabetes ( $\geq 2$  outpatient diagnoses [ $\geq 30$  days apart] or 1 inpatient diagnosis) and with at least one prescription between 2015 and 2021 were enrolled.
- T1DM patients were identified from the overall diabetes cohort and followed from cohort entry until death, loss to follow-up, or study end.
- Patients with gestational diabetes were excluded.
- Polypharmacy was defined as use of five or more medications.
- Medication patterns were assessed for up to six years, and trends were evaluated using regression models.

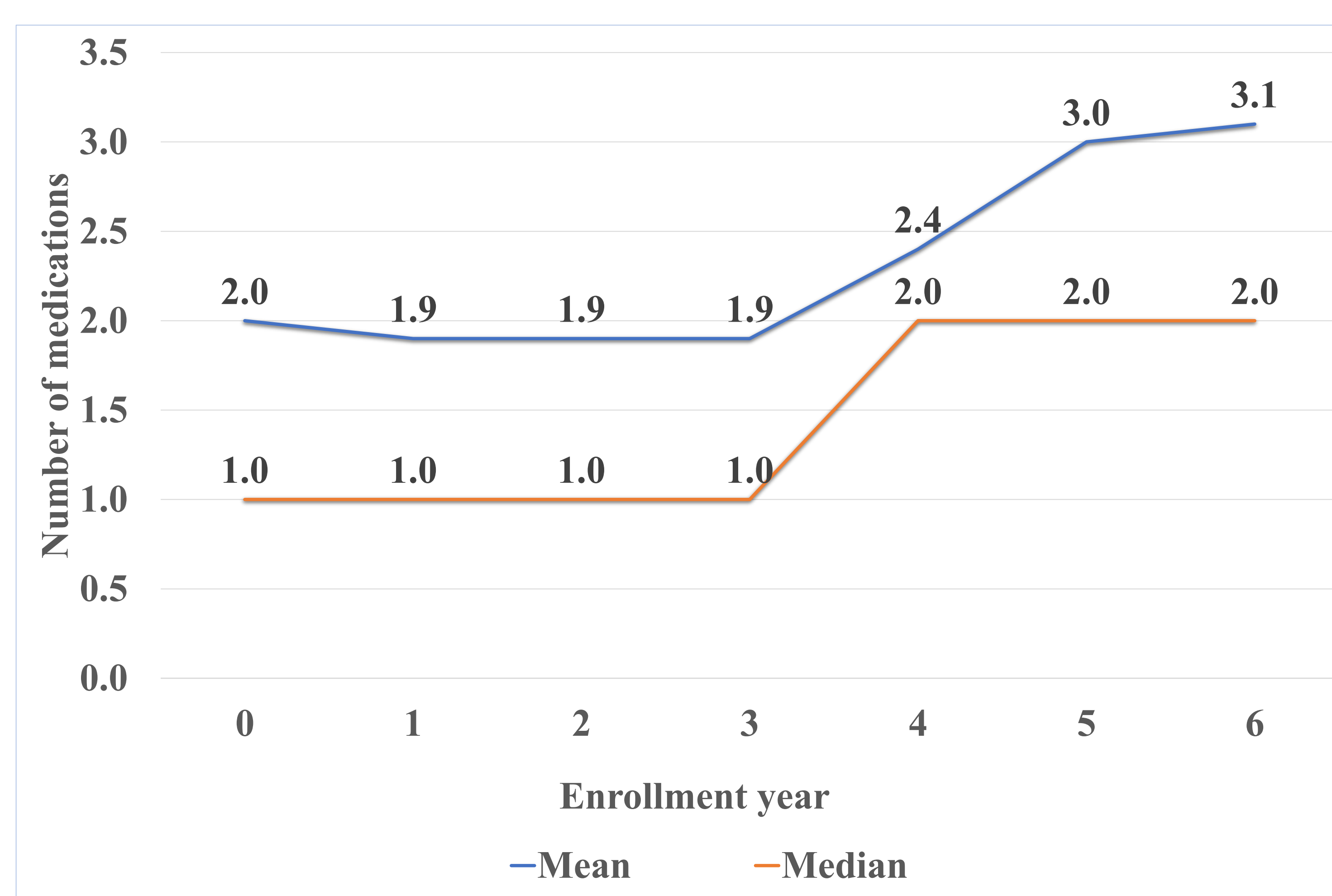
## RESULTS

- Among approximately 100,000 adults with diabetes, 209 had T1DM.
- Mean age was 38.6 years, and 68.9% were younger than 50 years.
- At baseline, 71.8% had no recorded comorbidity; hypertension was the most common comorbidity (21.5%).
- From cohort entry to year 6, the median number of medications increased from 1.0 to 2.0.
- Polypharmacy rose from 12.1% to 28.4%, and use of ten or more medications increased from 1.3% to 6.5%.

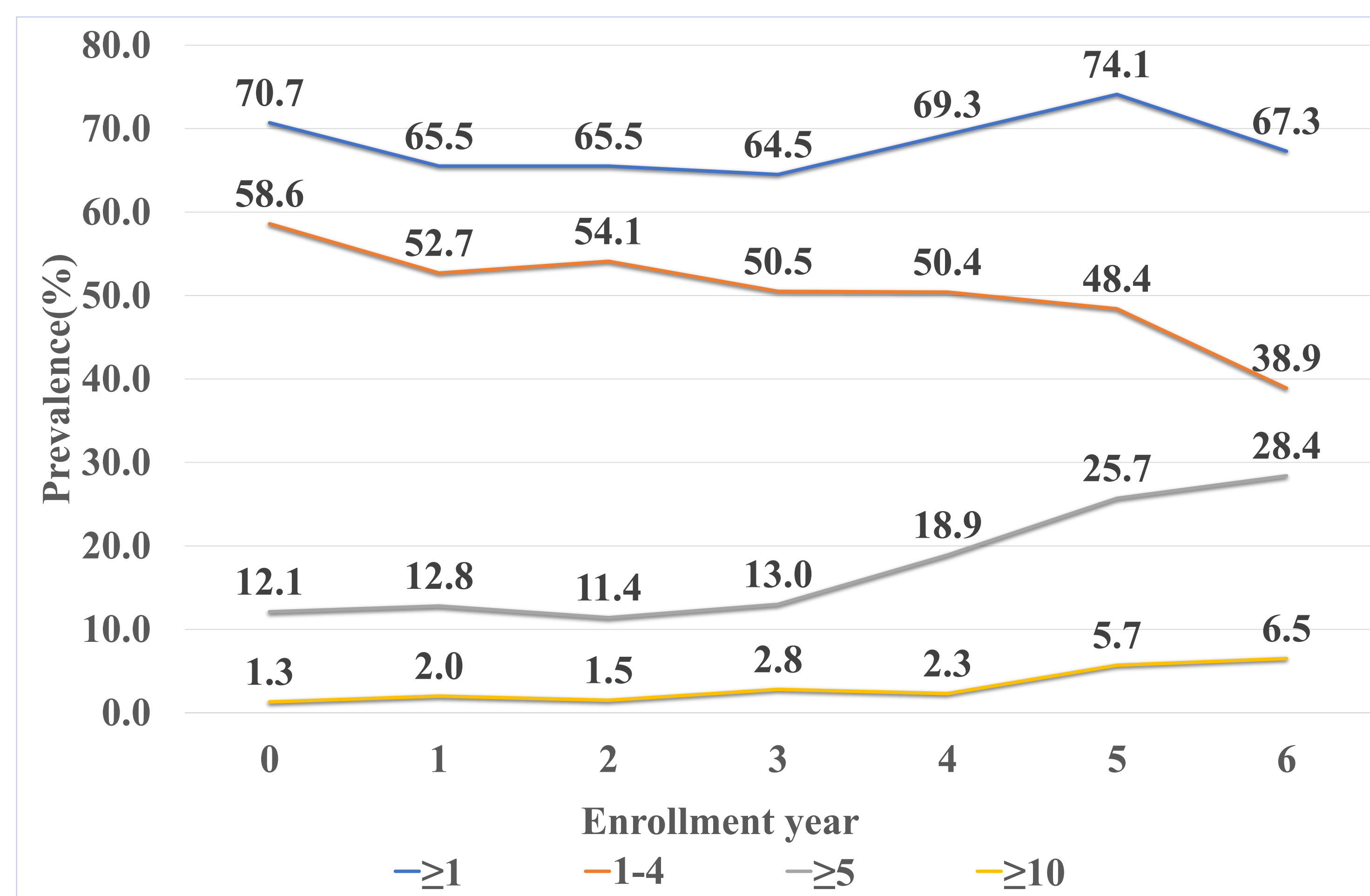
## RESULTS

- Insulin and analogues remained the most common glucose-lowering therapy, although use declined from 60.8% to 47.9%.
- Use increased for thiazolidinediones (3.3% to 10.4%), DPP-4 inhibitors (0.5% to 8.3%), oral combination therapies (1.0% to 6.3%), oral Chinese patent medicines (47.4% to 62.5%), and antihypertensive drugs (24.9% to 43.8%).

**Figure 1: Trends in number of medications used among T1DM**



**Figure 2: Trends in prevalence of use by number of medications**



## CONCLUSIONS

- Adults with T1DM represented a small subgroup of this Chinese diabetes cohort but showed a clear rise in medication burden.
- These findings suggest that medication management in T1DM extends beyond insulin therapy and requires regular review in routine care.

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