Real-world Adherence to anti-PCSK9 Monoclonal Antibody (mAb) and its Impact on Economic Burden of Cardiovascular Diseases in Patients with Hypercholesterolemia: A Retrospective Cohort Study in China

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BACKGROUND

- Adherence to lipid lowering therapy is reported to have consequences on atherosclerotic cardiovascular diseases (ASCVD) outcomes and healthcare resource use[1,2].
- In the real-world clinical practice, adherence to statins is proved to be suboptimal, being a major issue for Chinese patients[3], while the level of adherence to anti-PCSK9 monoclonal antibody (mAb) is still unclear.

OBJECTIVE

To evaluate the real-world adherence to anti-PCSK9 mAb and its relation to cardiovascular economic burden in China.

METHODOLOGY

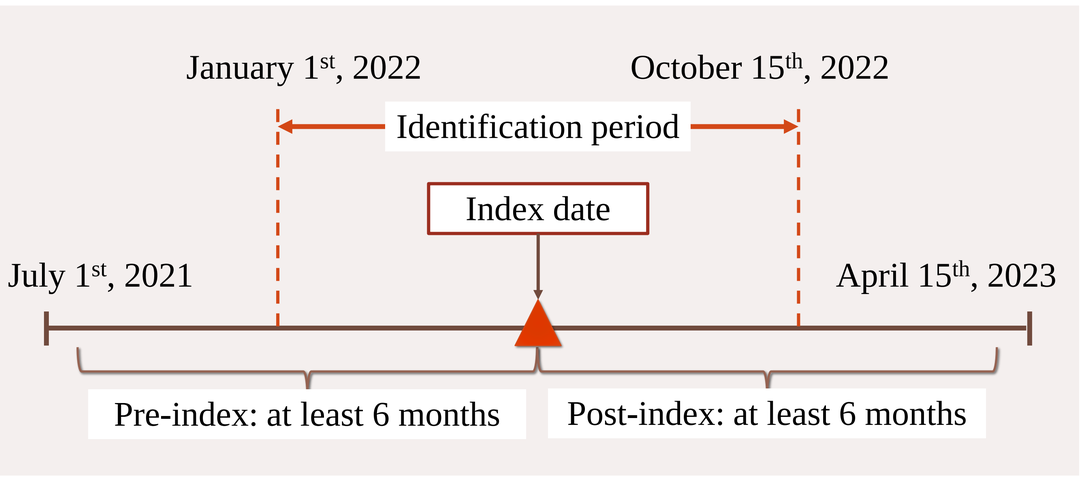
Data sources

This retrospective study was conducted using regional electronic medical record (EMR) database, including Tianjin, Inner Mongolia, Shandong and Hunan province.

Study design & study population

Adult patients who initiated an anti-PCSK9 mAb from January 1st, 2022 with at least a 6-month follow-up were included and grouped into ASCVD and ASCVD high-risk subgroups according to their medical history and risk levels of ASCVD during the 6-month pre-index period.

Figure 1. Study period and cohort selection timeframe



Endpoints

- **Primary endpoints**
  - Adherence to anti-PCSK9 mAb at 6 and 12-month measured by PDC (proportion of days covered) for ASCVD patients and ASCVD high-risk patients
- **Secondary endpoints**
  - Baseline disease characteristics for ASCVD and ASCVD high-risk patients
  - Annual costs related to cardiovascular visits and hospitalization for ASCVD and ASCVD high-risk patients

RESULTS

- 4,848 ASCVD patients and 2,700 ASCVD high-risk patients were included for analysis.

Table 1. Baseline characteristics for ASCVD and ASCVD high-risks patients

Characteristics	ASCVD patients (n=4,848)	ASCVD high-risk patients (n=2,700)
Age (mean±SD)	64.3±10.9	63.91±11.2
Male (n, %)	2944 (60.7%)	1615 (59.8%)
BMI (kg/m^2) (mean±SD)	25.1±4.0	25.4±3.5
History of smoking (n, %)	2273 (46.9%)	1182 (43.8%)
Cardiovascular Comorbidities (n, %)		
Hypertension (n, %)	4296 (88.6%)	1818 (67.3%)
Diabetes (n, %)	2629 (54.2%)	1480 (54.8%)
Chronic kidney disease (n, %)	830 (17.1%)	440 (16.3%)
Liver disease (n, %)	2536 (52.3%)	1338 (49.6%)

- Among ASCVD group, the mean PDC was 20.2% and 12.5% at 6 and 12-month respectively, with only 3.2% and 0.9% patients being adherent (PDC≥80%). Similar results were observed in ASCVD high-risk patients (see Table 2).

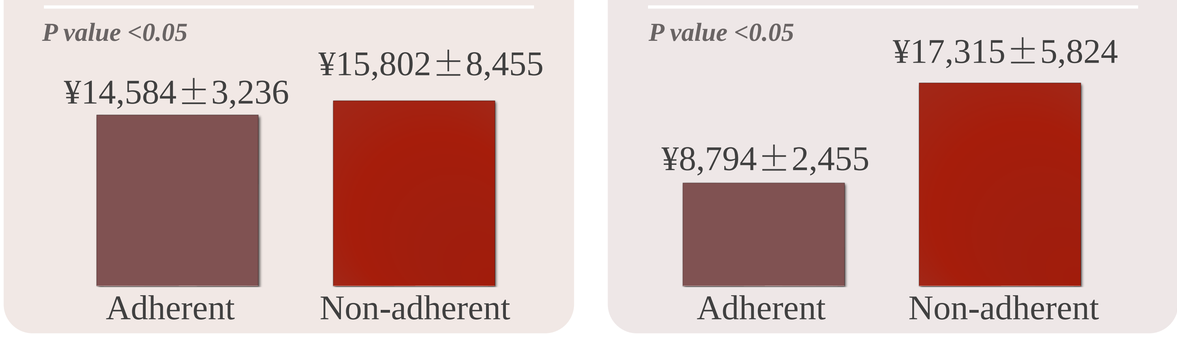
Table 2. PDC on anti-PCSK9 mAb among ASCVD and ASCVD high-risks patients

PDC results	ASCVD patients (n=4,848)	ASCVD high-risk patients (n=2,700)
At 6-month		
Follow-up period* (mean±SD)	9.7 ±2.1	9.3 ±1.8
PDC (mean, 95%CI)	20.2% (12.7%, 30.2%)	20.7% (13.2%, 30.7%)
Adherent (PDC>80%) patients (%)	3.2%	2.7%
At 12-month		
Follow-up period* (mean±SD)	13.2 ±1.0	13.1 ±1.1
PDC (mean, 95%CI)	12.5% (9.4%, 16.5%)	15.3% (11.8%, 19.5%)
Adherent (PDC>80%) patients (%)	0.9%	0.7%

* Follow-up period: months

- The adherent group had reduced annual costs for cardiovascular visits compared with the non-adherent among both ASCVD and ASCVD high-risk patients (see Figure 2).

Figure 2. Annual cardiovascular related costs in different adherence group



CONCLUSION

Anti-PCSK9 mAb adherence was poor in China with a significant impact on cardiovascular economic burden. There is a need to optimize treatment adherence to improve patient outcomes.

References

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