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Abstract No. 107 Cardiovascular Safety of Dextroamphetamine in Patients with Treatment-resistant Depression: A Retrospective Cohort Study

Theme: A. Non-communicable diseases

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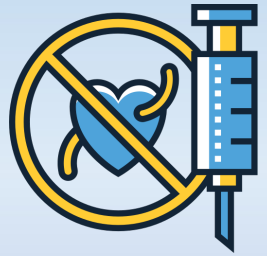
Purpose / Background:

- **Treatment-resistant depression (TRD)**
  - TRD is common in the UK primary care setting. More than half of the UK primary care patients who have taken antidepressants for at least 6 weeks continued to have significant depressive symptoms
  - TRD patients tend to have higher suicidal risk, poor overall general health, increased all-cause mortality, more frequent hospitalization, and large medical costs compared to non-TRD patients
  - Depression increases the risk of developing cardiovascular diseases (CVD)

- **Dextroamphetamine (D-AMP)**
  - Patients with TRD can benefit from psychostimulant augmentation of their medication regimen
  - As one of the most used psychostimulants for TRD, D-AMP can relieve depressive symptoms by promoting the release of catecholamines (primarily dopamine and norepinephrine) and preventing the reuptake of catecholamines
  - Given that depression is associated with increased risk of CVD-related outcomes, whether D-AMP imposes a further escalation of these risks is unclear



- **Study objective**
  - To examine whether the use of D-AMP is associated with escalated CVD risks among patients with TRD in the UK

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Methods:

Design	Population-based retrospective cohort design
Data source	**The Health Improvement Network (THIN) database:** Contains electronic medical records from over 700 general practitioners (GPs) across the United Kingdom (UK), with good representativeness of the UK population regarding the demographic structure and chronic disease prevalence
Cohort selection	The study cohort consists of all TRD patients between 2009 to 2012. TRD patients were defined as patients diagnosed with depression and had been prescribed with at least three types of antidepressants of at least a 28-day duration for the first two types, respectively. Patients with history of CVD were excluded from the cohort
Exposure	**D-AMP prescription** within 12 months after TRD development
Outcome	Time to any cardiovascular event (myocardial infarction, coronary artery disease, stroke, transient ischemic attack, and arrhythmia), death, or end of the observation period, whichever the earliest
Potential confounders	Age, sex, smoking status, and alcohol consumption
Statistical analysis	**Propensity score matching:** D-AMP users and non-D-AMP users will be matched by birth year, sex, smoking status, and alcohol consumption, with the date of the earliest D-AMP prescription after developing TRD as the index date for the D-AMP user group and the matched non-D-AMP user group **Cox proportional-hazards model:** examine the hazard ratio of cardiovascular events between TRD patients who were prescribed with D-AMP and TRD patients who were not **All analyses will be performed using R statistical environment (Version 4.1.1, Vienna, Austria)**

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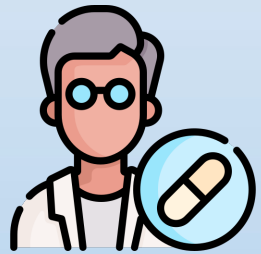
Clinical Implication:

- The cardiovascular safety research of dextroamphetamine has been primarily focused on patients with attention deficit hyperactivity disorder. If D-AMP is shown to be efficacious in controlling TRD symptoms, it is important to consummate its safety profile among the target patients.



- Using population-based cohort data, the results of this study will provide evidence to practitioners and policymakers in the usage of D-AMP by assessing the marginal increase of CVD risk of D-AMP intake on TRD patients.