

# Cholinesterase Inhibitors with Torsade de pointes/QT prolongation: a real-world pharmacovigilance study

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## Abstract

**Objective:**Cholinesterase inhibitor (ChEIs) is the first-line drug for Alzheimer's disease (AD). Understanding torsade de pointes (TdP)/QT prolongation with different ChEIs is essential for its safe and rational administration. This study aimed to evaluate the correlation between different ChEIs and TdP/QT prolongation. **Methods:**All ChEIs related TdP/QT prolongation cases were retrieved from the FAERS database using standard MedDRA query (SMQ) from the first quarter of 2004 to the third quarter of 2022. Disproportionality and sensitivity analysis were used to determine the signal of TdP/QT prolongation related to ChEIs. **Results:**557 cases of TdP/QT prolongation related to 3 ChEIs were searched by SMQ. The patients were mostly elderly people, with markedly more female than male. The signals of TdP/QT prolongation for ChEIs were detected by disproportionality analysis, and the signal of Donepezil was the strongest. The sensitivity analysis results indicate a robust and stable correlation between these signals with ChEIs. TdP/QT prolongation usually occurs within one month after taking ChEIs. **Conclusion:**The signals of TdP/QT prolongation related to ChEIs were strong and stable. It is necessary to be vigilant about the TdP/QT prolongation of various ChEIs, especially in the initial stage after taking ChEIs.

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**Keywords:** Cholinesterase Inhibitors, Torsade de pointes/QT prolongation, pharmacovigilance study, drug safety, FAERS

We state that our study not involved interventions performed with human subjects/patients and or substances administered, so there is no principal investigator.

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