

Tongxinluo in Patients with Acute ST-Segment Elevation Myocardial Infarction (STEMI)

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JAMA | Original Investigation

Traditional Chinese Medicine Compound (Tongxinluo) and Clinical Outcomes of Patients With Acute Myocardial Infarction The CTS-AMI Randomized Clinical Trial

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Introduction:

-Acute ST-segment elevation myocardial infarction (STEMI) poses significant risks despite existing reperfusion therapy and medical Management

-This study explores the potential benefits of Tongxinluo, a traditional Chinese medicine compound, in improving outcomes for patients with STEMI

Previous Findings:

- Tongxinluo was approved in China for angina pectoris and ischemic stroke in 1996
- In vitro studies demonstrated its ability to reduce endothelial cell apoptosis and cardiomyocyte injury
- Animal studies and small human trials suggested improved microvascular perfusion with Tongxinluo pretreatment before myocardial infarction

Study design and Methods:

- The China Tongxinluo Study for Myocardial Protection in Patients With Acute Myocardial Infarction (CTS-AMI) was a randomized, double-blind, placebo-controlled clinical trial
- Conducted in 124 clinical centers in China, involving patients with STEMI
- Patients were randomized to receive Tongxinluo or placebo, in addition to standard STEMI treatments
- Tongxinluo group received an oral loading dose followed by a maintenance dose for 12 months
- Placebo group received matching capsules
- Patients underwent STEMI guideline-directed treatments, including primary percutaneous coronary intervention (PCI)

Outcomes:

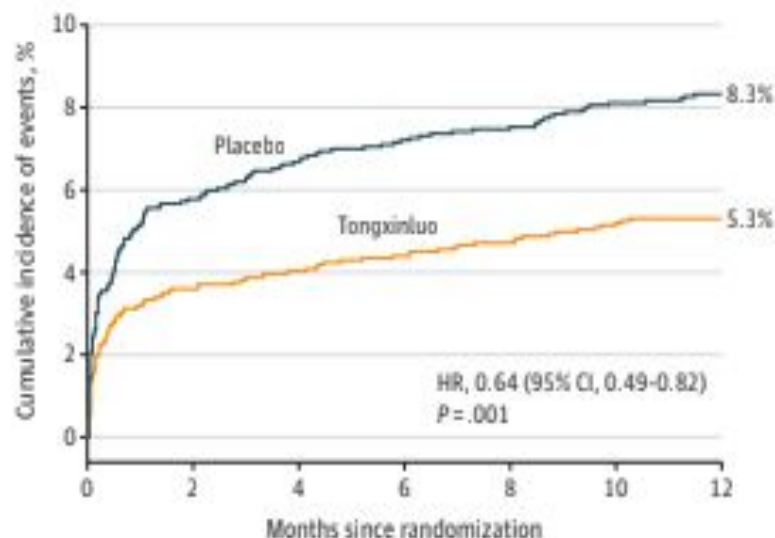
- Primary endpoint: Composite major adverse cardiac and cerebrovascular events (MACCEs) at 30 days
- Secondary endpoints: Individual components of MACCEs, severe STEMI complications, major bleeding, and outcomes at 1 year

Results:

- Tongxinluo significantly reduced 30-day MACCEs compared to the placebo group.
- Benefits persisted at 1-year follow-up.
- Reduced cardiac death, myocardial reinfarction, and severe STEMI complications with Tongxinluo.
- No significant difference in major bleeding or adverse events.

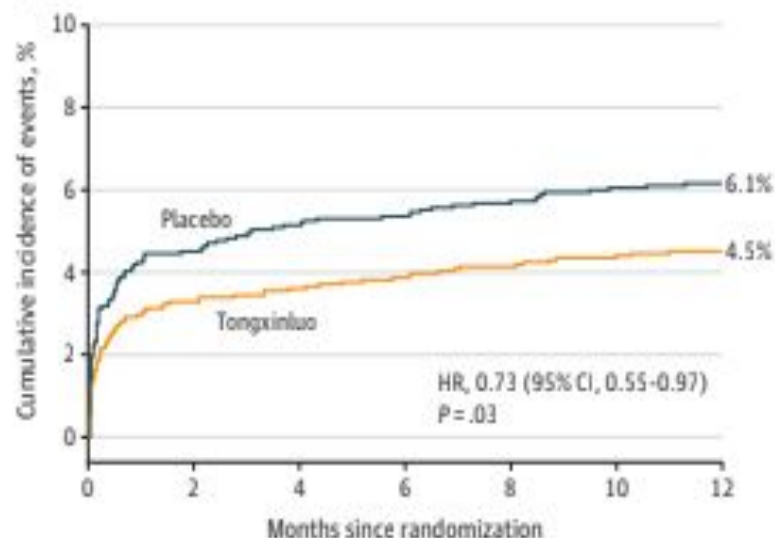
Figure 3. Kaplan-Meier Curves for 1-Year Major Adverse Cardiac and Cerebrovascular Events (MACCEs) and Individual Components of MACCEs

A 1-Year MACCEs



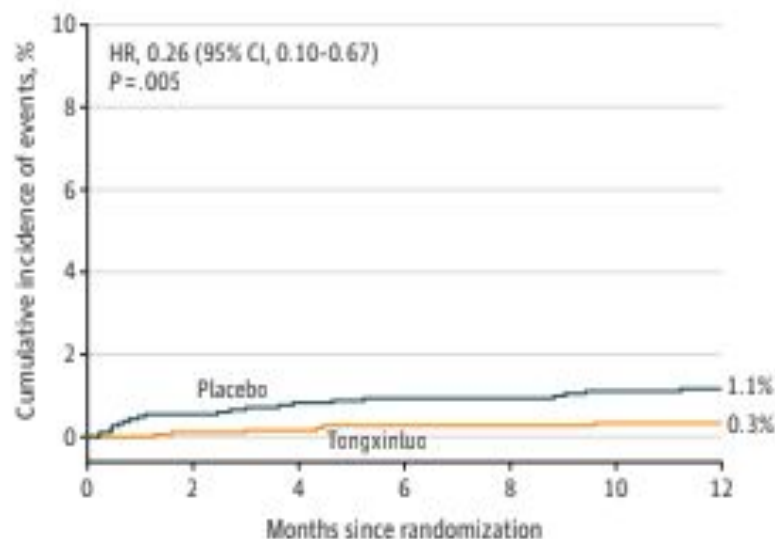
| No. at risk | 0 | 2 | 4 | 6 | 8 | 10 | 12 |
|-------------|------|------|------|------|------|------|------|
| Tongxinluo | 1889 | 1815 | 1806 | 1799 | 1792 | 1779 | 1683 |
| Placebo | 1888 | 1777 | 1757 | 1746 | 1740 | 1725 | 1609 |

B 1-Year cardiac death

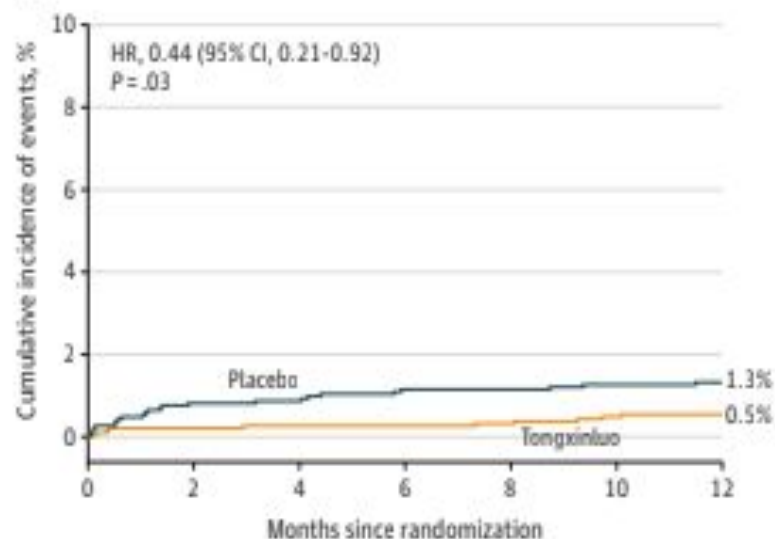


| No. at risk | 0 | 2 | 4 | 6 | 8 | 10 | 12 |
|-------------|------|------|------|------|------|------|------|
| Tongxinluo | 1889 | 1819 | 1811 | 1806 | 1800 | 1790 | 1693 |
| Placebo | 1888 | 1798 | 1783 | 1777 | 1770 | 1760 | 1643 |

C 1-Year myocardial reinfarction



D 1-Year stroke



Conclusion:

- Tongxinluo, as an adjunctive therapy to standard treatments, improved both short-term and long-term clinical outcomes in patients with STEMI
- Further research is needed to understand the mechanism of action of Tongxinluo in STEMI