

Fluoroquinolones and The Risk of Aortopathy: A Meta-analysis

Introduction

Recent studies have raised concerns that fluoroquinolone use is associated with an increased risk of aortopathy, including aortic aneurysm with and without dissection.

Objective

We performed a meta-analysis with a comprehensive literature review to further investigate this association.

Methods

This analysis was conducted per PRISMA guidelines. PubMed, Cochrane library, ClinicalTrials.gov, Embase, Web of Science and Google Scholar were searched for studies including adult (age > 18 years), patients exposed to fluoroquinolones or control antibiotics (amoxicillin/any other antibiotic) for urinary tract infection or pneumonia with a primary outcome of aortic aneurysm or dissection. Heterogeneity was calculated using Q statistic I².

Results

Six studies with 59% of males were included. Our analysis showed an increased combined risk of development of AA and AD with quinolone exposure when compared with controls (relative risk [RR] (95% confidence interval [CI]) = 2.11 (1.62 - 2.75), I²=83.700). Individual RR for aortic aneurysm (RR of 2.83 (95% confidence interval [CI]) = 2.02 - 3.95, I²=89.150)) and AD (RR of 1.99 (95% confidence interval [CI]) = 1.23-3.06), I²=71.33) were also significantly increased.

Conclusion

Compared to other antibiotics, the use of fluoroquinolones was associated with a significantly higher risk of aortic aneurysm and dissection combined.