

# Signal

## Fluoroquinolone use and risk of aortic aneurysm and dissection: nationwide cohort study

**From:** FR  
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### Related PhV Topic

Fluoroquinolones (Antibiotics for systemic use) = Aortic aneurysm and dissection

EPITT Reference: 18651

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### Highlights

#### Background

Fluoroquinolones (FQ) have been associated with the occurrence of tendinopathies long ago. More recently, their use has been associated with an increased risk of retinal detachment. This was considered to share the same mechanism than that leading to tendon rupture, which relate to the toxicity of FQ on the elastic component of connective tissue. The same pathway has been retained to hypothesize a potential risk of aortic damage induced by the use of FQ, that would be mediated by the stimulant effect of these antibiotics on matrix metalloproteinase activity, which results in degradation of collagen and extracellular matrix structural components, a mechanism that is also involved in the pathophysiology of aortic aneurysm.

To date, several large pharmacoepidemiological studies have been conducted that investigated the potential association between FQ and aortic injury. There is a new publication by Pasternak et al. (fluoroquinolone use and risk of aortic aneurysm and dissection : nationwide cohort study BMJ, 2018; ). In addition, A. Pariente and al, from Bordeaux University in France, performed case-time control and nested case-control studies using the nationwide French Health Insurance database to assess FQ-associated risk of arterial aneurysm or dissection. Whereas the increased risk of aortic and iliac Art-A/D was confirmed for FQ use, the authors concluded there was no evidence for an increased risk of such events for intracranial arteries.

Considering the new data available, France would like to reopen the signal procedure on this topic while the article 31 referral is ongoing but deals with another problematic (the long-lasting effects mainly affecting musculoskeletal and nervous systems with quinolone and fluoroquinolone antibiotics).

#### Signal description (including recommended actions and summary of the relevant case narratives)

See attached document.

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#### Source of Information:

Literature  
Study

