Direct Healthcare Professional Communication

Systemic and inhaled fluoroquinolones*: risk of aortic aneurysm and dissection

Dear Healthcare professional,

Bayer Pharma AG /Bayer AG in agreement with the European Medicines Agency and the Scientific centre of drug and medical technology expertise after academician Emil Gabrielyan would like to inform you of the addition of a new warning regarding risk of aortic aneurysm and dissection associated with fluoroquinolones for systemic and inhalation use.

Summary

- **Systemic and inhaled fluoroquinolones may increase the risk of aortic aneurysm and dissection, particularly in older people.**
- **In patients at risk for aortic aneurysm and dissection, fluoroquinolones should only be used after careful benefit-risk assessment and after consideration of other therapeutic options.**
- **Conditions predisposing to aortic aneurysm and dissection include a family history of aneurysm disease, pre-existing aortic aneurysm or aortic dissection, Marfan syndrome, vascular Ehlers-Danlos syndrome, Takayasu arteritis, giant cell arteritis, Behçet's disease, hypertension, and atherosclerosis.**
- **Patients should be advised about risk of aortic aneurysm and dissection and told to seek immediate medical attention in the emergency department in case of sudden severe abdominal, chest or back pain.**

Background on the safety concern

Fluoroquinolones are antibiotics approved in the European Union for the treatment of several bacterial infections, including life-threatening ones.

Data from epidemiologic and non-clinical studies indicate an increased risk of aortic aneurysm and dissection after treatment with fluoroquinolones.

The epidemiological studies [1-3] report an about 2-fold increase in risk of aortic aneurysm and dissection in patients taking systemic fluoroquinolones compared with patients taking no antibiotics or other antibiotics (amoxicillin); with older people being at higher risk.

A non-clinical study [4] reported that ciprofloxacin increases the susceptibility to aortic dissection and rupture in a mouse model. This finding is likely a class effect similar to fluoroquinolones being harmful to tendon tissue and thereby increasing the risk of tendon disorders.

* fluoroquinolones which are registered in the territory of the Republic of Armenia under the designationAvelox® (moxifloxacin), coatedtablet, 400 mg; Avelox®, solution for infusion, 1,6 mg/ml; Ciprobay (ciprofloxacin), film-coatedtablet, 500 mg

Aortic aneurysm and dissection are rare events, occurring with an incidence of about 3–30 of 100,000 persons per year. Factors that increase the risk include family history of aneurysm disease, pre-existing aortic aneurysm or aortic dissection, Marfan syndrome, vascular Ehlers-Danlos syndrome, Takayasu arteritis, giant cell arteritis, Behçet's disease, hypertension, and atherosclerosis.

Therefore, systemic or inhaled fluoroquinolones should only be used after careful benefit-risk assessment and after consideration of other therapeutic options in patients at risk for aortic aneurysm and dissection.

Patients should be advised about this risk and told to seek immediate medical attention in case of sudden abdominal, chest or back pain.

Call for reporting

Reporting suspected adverse reactions after authorisation of the medicinal product is important. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system of the Republic of Armenia.

Company contact point

For access to further information please contact:

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AO «BAYER»

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References

[1] Daneman N, Lu H, Redelmeier DA. Fluoroquinolones and collagen associated severe adverse events: a longitudinal cohort study. BMJ Open. 2015 Nov 18; 5(11):e010077

[2] Lee CC, Lee MT, Chen YS, Lee SH, Chen YS, Chen SC, Chang SC. Risk of Aortic Dissection and Aortic Aneurysm in Patients Taking Oral Fluoroquinolone. JAMA Intern Med. 2015 Nov;175(11):1839-47.

[3] Pasternak B, Inghammar M and Svanström H. Fluoroquinolone use and risk of aortic aneurysm and dissection: nationwide cohort study. BMJ 2018; 360: k678.

[4] LeMaire SA, Zhang L, Luo W, Ren P, Azares AR, Wang Y, Zhang C, Coselli JS, Shen YH. Effect of Ciprofloxacin on Susceptibility to Aortic Dissection and Rupture in Mice. JAMA Surg. 2018 Jul 25:e181804. [Epub ahead of print]