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Suspension of ranitidine medicines in the EU

EMA's human medicines committee (CHMP) has recommended the suspension of all ranitidine medicines in the EU due to the presence of low levels of an impurity called *N*-nitrosodimethylamine (NDMA).

NDMA is classified as a probable human carcinogen (a substance that could cause cancer) based on animal studies. It is present in some foods and water supplies and is not expected to cause harm when ingested at very low levels.

Available safety data do not show that ranitidine increases the risk of cancer, and any possible risk is likely to be very low. However, NDMA has been found in several ranitidine medicines above levels considered acceptable, and there are unresolved questions about the source of the impurities.

There is some evidence that NDMA may form from the degradation of ranitidine itself with increasing levels seen over its shelf life. It is not clear whether NDMA can also be formed from ranitidine inside the body. Some studies suggest that it can while others do not. Given the uncertainties, the CHMP has recommended a precautionary suspension of these medicines in the EU.

Ranitidine medicines are used for reducing levels of stomach acid in patients with conditions such as heartburn and stomach ulcers. Alternatives are available and patients should contact their healthcare professionals if they need advice about which medicine to take.

Many ranitidine medicines have not been available in the EU for several months. This is because national authorities have recalled them as a precaution while the EMA review was ongoing.

EMA has also recommended conditions for lifting the suspension of ranitidine medicines, including requirements for companies to provide more data.

Since 2018 NDMA and similar compounds known as nitrosamines have been detected in a number of medicines, with EU regulators taking action to identify possible sources of the impurities and set strict new requirements for manufacturers.

EMA will continue working with national authorities, EDQM,[1] the European Commission and international partners to make sure that effective measures are taken to prevent the presence of these impurities in medicines.

[1] The European Directorate for the Quality of Medicines & HealthCare

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Information for patients

- Ranitidine medicines are being suspended in EU as a precaution because of the presence at low levels of an impurity called NDMA.
- Alternative medicines are available. Contact your doctor or pharmacist if you have any questions about which alternative to take.
- If you have been prescribed ranitidine, your doctor will advise you on an alternative.

Information for healthcare professionals

- Ranitidine medicines are being suspended in the EU due to the presence of NDMA impurities.
- Although the exact source of the impurity in ranitidine is yet to be determined, it is possible that NDMA may form from the degradation of ranitidine even under normal storage conditions. Some studies indicated that ranitidine may cause additional endogenous NDMA formation by its degradation or metabolism in the gastro-intestinal tract, although other studies did not.
- Available clinical and epidemiological data do not show that ranitidine increases the risk of cancer.
- While ranitidine medicines are unavailable, advise patients on alternative medicines.
- Healthcare professionals should advise patients who need assistance, including those who have been taking ranitidine without a prescription, on how to treat or manage conditions such as heartburn and gastric ulcers.

More about the medicine

Ranitidine belongs to a class of medicines known as H2 (histamine-2) blockers, which work by blocking histamine receptors in the stomach and reducing the production of stomach acid.

It is used to treat and prevent conditions such as heartburn and stomach ulcers. Ranitidine-containing medicines were authorised by national authorities and are available as tablets, syrups, injectable formulations.

More about the procedure

The review of ranitidine was initiated on 12 September 2019 at the request of the European Commission, under Article 31 of Directive 2001/83/EC.

The review has been carried out by the Committee for Medicinal Products for Human Use (CHMP), responsible for questions concerning medicines for human use, which has adopted the Agency's opinion. The CHMP opinion will now be forwarded to the European Commission, which will issue a final legally binding decision applicable in all EU Member States.