

Medical Science

Histamine-2 receptor Blocking: a novel therapy for Schizophrenia

Balasubramanian J^{1*}

1. Shield Health Care Pvt Ltd, Chennai-600095, Tamil Nadu, India

*Corresponding author: Balasubramanian J, Shield Health Care Pvt Ltd, Chennai-600095, India, E-mail: jvbalpharm@yahoo.co.in

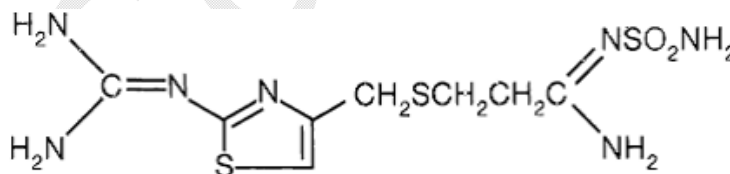
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Famotidine is a histamine-2 blocker. It works by decreasing the amount of acid the stomach produces. Famotidine is N'(aminosulfonyl)-3-[[[2-[(diaminomethylene) amino]-4-thiazolyl]methyl]thio]propanimidamide. The empirical formula of famotidine is $C_8H_{15}N_7O_2S_3$ and its molecular weight is 337.43. Its structural formula is given below:

Famotidine is white to pale yellow crystalline compound that is freely soluble in glacial acetic acid, slightly soluble in methanol, very slightly soluble in water, and practically insoluble in ethanol. Each tablet for oral administration contains either 20 mg or 40 mg of famotidine and the following inactive ingredients: hydroxypropyl cellulose, hypromellose, iron oxides, magnesium stearate, microcrystalline cellulose, corn starch, talc, titanium dioxide, and carnauba wax.

Famotidine is used to treat and prevent ulcers in the stomach and intestines. It also treats conditions in which the stomach produces too much acid, such as Zollinger-Ellison syndrome. Famotidine also treats gastroesophageal reflux disease (GERD) and other conditions in which acid backs up from the stomach into the esophagus, causing heartburn. Professor Jesper Ekelund, M.D., and his team showed that a very large dose of famotidine (200 mg daily) can penetrate the blood-brain barrier and affect the histamine system in the brain.

Researchers said that within one week the symptoms of persons suffering from schizophrenia started to ease, and after four weeks of treatment, symptoms had decreased significantly. For the study, researchers randomly divided 30 persons suffering from schizophrenia into two groups, one which received famotidine and the other, placebo. All of the patients who took famotidine responded positively to the treatment while the symptoms of those who were on a placebo did not change. Schizophrenia is the most common and severe psychotic disorder, and is the cause of at least half of all psychiatric hospital treatment days. Researchers said this is the first randomized, controlled trials in humans to test the effect of histamine (H₂) blockade in schizophrenia. Famotidine works by blocking the histamine H₂ receptor. There are important neurons in the brain that use histamine as their primary signaling substance. These neurons have an important role as regulators of other signaling substances. From animal research, it is known that by affecting the histamine system, one can also affect other signaling substances that are known to be involved in schizophrenia. Despite the success in the study, researchers said famotidine shouldn't be used directly as treatment for schizophrenia until long-term use of a dose of this size has been proved safe.



REFERENCE

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