

Allergies: What are the advantages and disadvantages of various antihistamines?



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An allergen is the substance that a person over-reacts (is "allergic") to, like house dust mites or pollen. The body responds to the allergen with a chain of chemical reactions. First, the body makes antibodies against the allergen and sends these out through the bloodstream. One of the results is that particular types of cells respond to the antibodies by releasing chemicals, including a substance called histamine. Histamine causes allergic reactions like sneezing, runny eyes, and skin rashes.

Antihistamines are drugs which aim to stop histamine from working. The first antihistamines, however, crossed too easily into the brain, and often caused quite severe adverse effects. The drugs were actually strong sedatives, so they made people very sleepy. Their beneficial effects also wore off so quickly that people needed to take these drugs several times a day.

A newer generation of drugs that caused fewer adverse effects and had a longer-lasting positive effect were developed. Four of these drugs are now among the most commonly used drugs for the relief of allergy symptoms: cetirizine, desloratadine, fexofenadine and loratadine.

Researchers from the Oregon Evidence-Based Practice Center in the USA looked for trials that compared these four drugs with each other, to see if any were more effective than others for allergic rhinitis or urticaria. Allergic rhinitis is the scientific name for both hay fever that happens most around springtime (seasonal allergic rhinitis) and the same symptoms of sneezing, runny nose and watery eyes occurring year-round (perennial allergic rhinitis). Urticaria (often called hives) is an itchy reaction on the skin that is often associated with red, swollen patches called wheals.

The researchers found 46 trials in adults and 27 trials in children, as well as some trials that only studied results for less than two weeks. Although this seems like a lot of research, because there were so many drugs and different symptoms, many important questions remain unanswered.

Most of the trials looked only at seasonal allergic rhinitis. It is not yet clear which of these drugs might be the most effective for each particular type of allergic reaction, with

the least adverse effects. There was some evidence that loratadine might start working more quickly than other drugs in people with perennial allergic rhinitis. Loratadine might also be better at relieving urticaria than cetirizine. Cetirizine might also cause more sleepiness than some of the other drugs, but this is not certain.

Adverse effects were common with all the drugs: around 15% to 25% of adults across the trials experienced adverse effects (almost 2 to 3 out of every 10 people using the drugs). These included sleepiness, headache, nausea, stomach ache or rash. But the adverse effects were generally not so bad that people would stop taking the drugs. Only about 3% of people stopped taking the antihistamines because the adverse effects were too bad (that is less than 1 person out of every 20).

The main safety concern with antihistamines is possible adverse effects on the heart (cardiac effects). This did not happen in these trials, but more research is still needed on the safety of these drugs. There have been some other studies which suggested that some of these drugs might increase the risk of irregular heartbeat (cardiac arrhythmia). The researchers concluded, however, that people seem to tolerate these drugs fairly well, and all of these drugs can relieve allergy symptoms.

Another option for people with allergies is specific immunotherapy. You can read more about that here (URL: <http://www.informedhealthonline.org/index.375.en.html>).

Glossary

evidence

Evidence is what we call scientific proof from well-conducted, good-quality scientific trials that have been carefully designed to answer specific questions. Depending on the types of questions, different scientific research methods (types of study) are most appropriate to find reliable answers to these questions. Randomized controlled trials (RCTs), for example, are the best way to get reliable evidence on the effectiveness of medical treatments (interventions). This type of study, however, is not the best form of evidence for all possible questions, and does not provide the best answers to all kinds of questions, either. Epidemiological studies, for example, are very suitable for establishing well-founded proof for the spreading of a disease in the population.

allergy

An allergy is the body's overly sensitive reaction to a foreign substance. The body produces antibodies just as it would if the substance were a germ, although it is not dangerous to the body. The symptoms of the allergy partly depend on the substance causing it, the allergen. People with allergies often have symptoms like running nose, watery eyes, itching, rashes, stomach and bowel problems or asthma. Typical allergens are pollen, animal hair, proteins in certain food or house dust mite excrement.

Sources

Oregon Evidence-Based Practice Center (OHSU). *Drug class review on newer antihistamines*. Final report April 2006. [Full text part 1 (URL: <http://www.ohsu.edu/drugeffectiveness/reports/documents/Newer%20Antihistamines%20Final%20Report%20U1.html>)]
[Full text part 2 (URL: <http://www.ohsu.edu/drugeffectiveness/reports/documents/ETs%20Newer%20Antihistamines%20Final%20Report%20U1.html>)]

The German Institute for Quality and Efficiency in Health Care (IQWiG)

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Evidence basis of our health information

Our information is based primarily on systematic reviews of the effects of health care. Systematic reviews are necessary to gain an objective picture of health care. In order to do this, a clear question is formulated. Researchers then find all the relevant studies that could answer this question. They then evaluate those studies.

You can find a list of the evidence and other scientific literature on which this information is based at [**www.informedhealthonline.org**](http://www.informedhealthonline.org)

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