

Beta-blocker goes on trial as asthma therapy

Alison Abbott

A drug for lowering high blood pressure is to be tested as a treatment for asthma despite warnings on its packaging that it should not be prescribed to asthmatics.

The US Food and Drug Administration approved the trial on nadolol, one of a group of drugs called beta-blockers, because some animal tests have suggested it could give long-term relief from the symptoms of asthma.

The approval for the clinical trial is seen by many in the field as a vindication for pharmacologist Richard Bond of the University of Houston in Texas. Bond has been pushing for years for beta-blockers to be used to treat asthma, despite claims by colleagues that the idea is counterintuitive or even dangerous.

“Every medical student learns never to prescribe a beta-blocker to an asthmatic, because it would have a potentially fatal effect,” says Clive Page, a pharmacologist and asthma expert at King’s College London.

Beta-blockers treat high blood pressure by blocking receptors called beta-adrenoceptors on the membranes of cells in blood vessels. These receptors normally bind to hormones such as adrenaline, causing blood vessels to contract and raising blood pressure. Beta-blockers improve blood flow by reversing the effect.

But beta-adrenoceptors are found in other tissues, and in the lungs their activation makes the airways dilate. So drugs that block the receptors can make the airways contract, at least in the short term.



A good wheeze: Richard Bond has long backed beta-blockers as a treatment for asthma.

A class of asthma drugs called beta-agonists activate these receptors in the lungs. But a decade ago, long-term use of these drugs was linked to an increase in the number of deaths, probably because the treatment does not control the inflammation that underlies asthma. The drugs are now often prescribed in combination with anti-inflammatory steroids.

Bond rattled the cages of asthma biologists with his studies in mice, which showed that although beta-blockers initially made

asthmatic lungs more sensitive to asthma attacks, long-term treatment made them less sensitive.

Bond was inspired by a similar shift from the use of beta-agonists to treat congestive heart failure. The drugs improved heart function in the short term, but they seemed to cause more deaths in long-term treatment. Beta-blockers, on the other hand, worsened symptoms initially, but improved heart function and cut mortality later. Beta-blockers are now a routine treatment for heart disease.

Inverseon, a biotechnology company based in San Francisco, is now recruiting asthmatic patients for the clinical trial of nadolol. In the trial, the dose will be increased in weekly steps to try to avoid short-term detrimental effects.

Page says that he has been impressed with the animal data. He is now collaborating with Bond in a study testing a range of beta-blockers, including commonly prescribed drugs such as propranolol, in various animal models of asthma.

John Fozard, a veteran asthma pharmacologist with the drug company Novartis in Basel, Switzerland, points out that many treatments that have worked well in animals have disappointed in human trials. Bond acknowledges this, but says: “Even if it doesn’t work in humans, the principle that compounds can have different pharmacological effects when they are given for long or short periods has been demonstrated.” ■

British Museum bids to stop illicit traders using eBay

Paula Gould, London

The British Museum in London is negotiating with the Internet auction company eBay in an attempt to stem the illegal sale of archaeological finds.

The rise of Internet auction houses has made it easier to sell archaeological treasures. These are often ancient coins or pieces of jewellery, worth anything from tens to a few hundred pounds. But all such finds unearthed in England or Wales after September 1997 should, by law, be registered and viewed by experts. Even if museum officials decide not to buy the item, experts say it is crucial to record what is found.

“Some people may think that their finds are unimportant, but we still need to know about them,” says Michael Lewis, deputy head of the Portable Antiquities Scheme at the British Museum.

Museum officials estimate that five potential ‘treasure items’ go unreported every week. A member of staff now



In the money: illegal trading in Roman artefacts, such as these coins, is rife on the Internet.

scans eBay every day for suspect sales.

Most other European countries have stricter laws governing amateur archaeology, yet these too are being flouted. In Germany, it is illegal for anyone not working on an authorized site to dig up artefacts. But ancient items are still finding their way onto eBay.

“These people know where the sites of archaeological interest are, and they are going there with metal detectors,” says Wilfried Menghin, director of the Museum of Prehistory and Early History in Berlin. Staff at the Berlin museum have bought suspect relics on eBay in an attempt to trap the sellers, but have so far been unable to gather enough evidence to secure a conviction.

The British Museum wants eBay to help prevent illegal transactions, or at least to put messages on the site reminding people of their responsibilities. But eBay counters that the museum is probably better placed to keep an eye on things; the auction site’s staff say they will take down any item that the museum reports to the police. ■

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