Avandia was promoted as acting in a novel way to help the body's own insulin work more effectively and was said to be better than older drugs in controlling blood sugar levels. The focus was on the blood sugar and not on the serious complications that cause suffering and ultimately kill patients.

When Avandia was licensed, there was limited evidence of its effectiveness and no evidence about its effect on the risk of heart attacks and strokes. The drug regulators asked the manufacturer to do additional studies, but meanwhile Avandia became widely and enthusiastically prescribed worldwide. Reports of adverse cardiovascular effects began to appear and steadily mounted; by 2004 the World Health Organization was sufficiently concerned to ask the manufacturer to look again at the evidence of these complications. It did, and confirmed an increased risk.[6]

It took a further six years before the drug regulators took a really hard look at the evidence and acted. In September 2010 the US Food and Drug Administration announced that it would severely restrict the use of Avandia to patients who were unable to control their type 2 diabetes with other drugs; the same month the European Medicines Agency recommended that Avandia be withdrawn from use over the subsequent two months. Both drug regulators gave the increased risk of heart attacks and strokes as the reason for their decision. Meanwhile independently minded investigators uncovered a litany of missed opportunities for action – and, as one group of health professionals put it, a fundamental need for drug regulators and doctors to 'demand better proof before we embarked on mass medication of a large group of patients who looked to us for advice and treatment'.[7]

Mechanical heart valves

Drugs are not the only treatments that can have unexpected bad effects: non-drug treatments can pose serious risks too. Mechanical heart valves are now a standard treatment for patients with serious heart valve disease and there have been many improvements in design over the years. However, experience with a particular type of mechanical heart valve showed how one attempt to improve a design had disastrous consequences. Beginning in the early 1970s, a device known as the Björk-Shiley

heart valve was introduced, but the early models were prone to thrombosis (clot formation) that impaired their function. To overcome this drawback, the design was modified in the late 1970s to reduce the possibility of clots.

The new device involved a disc held in place by two metal struts (supports), and many thousands of this new type of valve were implanted worldwide. Unfortunately, the structure of the valves was seriously flawed: one of the struts had a tendency to snap – a defect known as strut fracture – and this led to catastrophic and often fatal valve malfunction.

As it happened, strut fracture had been identified as a problem during pre-marketing tests of the device, but this was attributed to defective welding and the cause was not fully investigated. The US Food and Drug Administration (FDA) nevertheless accepted this explanation, along with the manufacturer's assurance that the lowered risk of valve thrombosis more than compensated for any risk of strut fracture. When the evidence of disastrous valve failure became only too apparent, the FDA eventually acted and forced the valve off the market in 1986, but not before hundreds of patients had died unnecessarily. Although product regulation systems have now improved to include better post-marketing patient monitoring and comprehensive patient registries, there is still a pressing need for greater transparency when new devices are introduced.[8]

TOO GOOD TO BE TRUE

Herceptin

Commercial companies are not alone in trumpeting the advantages of new treatments while down-playing drawbacks. Professional hype and enthusiastic media coverage can likewise promote benefits while ignoring potential downsides. And these downsides may include not only harmful side-effects but also diagnostic difficulties, as shown by events surrounding the breast cancer drug trastuzumab, better known by the trade name Herceptin (see also Chapter 3).

In early 2006, vociferous demands from coalitions of patients