

Interestingly, Indocin not only reaches peak levels in the blood quickly but it is eliminated from the body quickly, too. This is a distinct advantage, because pharmacologists (specialists interested in the chemistry of new drugs) are convinced that drugs that are quickly eliminated usually have a greater built-in safety factor. The feeling is that the quicker the drug gets in and then out of the body, the safer it is likely to be.

Studies show that Indocin may be eliminated entirely within 48 hours, which, as prescription drugs go, is extremely quick. There are, for example, some drugs on the market that remain in the body for several days, or even weeks, after initial administration.

During the clinical trials of Indocin the majority of patients treated were suffering from chronic joint disorders and related rheumatic diseases that had a "history" of at least five years' duration. Most of the patients selected for treatment had failed to get relief or had experienced serious side effects from other available drugs.

Thus, from the outset, Indocin was designed as a sort of "trouble-shooter" drug that could help patients who might not have gained beneficial effects from any other medication. There are, as a result, countless cases in the Merck files that show that Indocin works where no other drug has.

Whenever a new drug is introduced, doctors wonder whether it will have major effects on the body's vital systems. Indocin's record in this regard is good. Studies show that it has no significant effect on weight, pulse rate, or blood pressure. Nor does it upset the body's glandular system or its blood-clotting mechanisms.

Indocin's history is a fascinating story in itself. Research at Merck into Indocin-type compounds started about a decade ago, but Merck's interest in the entire subject of pain and inflammation goes back at least 30 years.

In 1933 Dr. R. E. Gruber, a Merck vice-president, agreed to a request made by the Johns Hopkins School of Medicine, Baltimore, to develop a process for producing adrenal cortex hormones for the relatively few sufferers of Addison's disease and other adrenal disorders.

Merck did this, and the spark of interest was rekindled during World War II when the company was asked to help Dr. Edward C. Kendall in research on adrenal hormones. Merck was told that this research "would be in the national interest."

It seems that during the war American intelligence had heard rumors that Germany was buying adrenal gland extract from Argentine slaughterhouses and giving it to Luftwaffe pilots in the hope that the extract would enable the pilots to fly at altitudes of 40,000 feet or more.

Obviously, the United States military wanted to know if adrenal extract conferred any such capability upon airmen. (It didn't.) Dr. Kendall went to work with a young Merck chemist, Dr. Lewis H. Sarett, who, in 1944, just before turning 27, developed the first synthesis of compound E. This development, in turn, paved the way for the discovery that compound E had therapeutic effects. The compound then became known as cortisone.

After the war cortisone and its later modifications came into wide use for arthritis and other inflammatory ailments, but gradually it was discovered that cortisone produced a great many undesirable side effects.

Thus, from the early 1950s until the present, researchers have been hard at work trying to develop anti-inflammation drugs that work but do not produce cortisone-like side effects.

In 1953 a Merck research group, led by Dr. Sarett, began to wonder if they could develop a drug that was nonhormonal in nature, and thus unlike cortisone, but a drug that would provide the same benefits as cortisone.

In their search they worked on compounds at first thought to be valuable against certain emotional disorders. But the compounds later proved to be of very limited value in mental disease. One of the compounds screened, however, did have some positive effects on inflammation, and this in turn led to the synthesis of still another chemical. In March 1964 this chemical, indomethacin, became, in the words of one well-known scientist, "the most promising drug since cortisone."

After considerable testing, the drug was approved for prescription use in June 1965. Merck has deliberately avoided publicity for the drug for several reasons.

Since the FDA's new tough line on all new drugs, pharmaceutical companies are becoming reluctant to blow their horns about any new compound. And more