

UNIVERSITY OF TEXAS SOUTHWESTERN MEDICAL SCHOOL---(Dr. Morris Ziff)

Studies at the University of Texas Southwestern Medical School have yielded the first plausible explanation of how an old and controversial remedy for rheumatoid arthritis -- gold salts -- works.

Research on this and other important arthritis problems will continue under a grant from The National Foundation-March of Dimes. The award of \$30,760, covering the second year of a long-term grant, was announced jointly today by Dr. A. J. Gill, dean of the medical school, and Basil O'Connor, president of The National Foundation.

The project is under the direction of Dr. Morris Ziff, professor of internal medicine and one of the nation's top arthritis investigators.

Gold compounds have been used since 1928 to relieve painful inflammation caused by rheumatoid arthritis. But no one has quite understood why gold has a helpful effect and many physicians have discouraged its use because of side effects.

In a series of experiments, Dr. Ziff and his associates studied the effect of gold salts on two cell functions that are believed to be involved in the inflammatory reaction caused by rheumatoid arthritis.

One concerns lysosomes, special membrane-enclosed bodies in cells which contain powerful digestive enzymes. Recent evidence has made these lysosome enzymes new suspects in the characteristic damage produced by rheumatic diseases. It is thought the enzymes may leak out of lysosomes and inflame tissue.

The Dallas researchers found that under certain experimental conditions, gold salts had little effect on these enzymes at low temperatures, but drastically reduced activity of the enzymes at 37 degrees centigrade, or body temperature.

These results, Dr. Ziff points out, indicate that at body temperature the gold salts enter the cell, possibly getting into the lysosomes within the cell, and in some way inhibit the action of the enzymes.

If this happens in the human body, he says, it would explain not only the anti-rheumatic effects of gold but also could explain the toxic quality of gold therapy, because lysosome enzymes are important in normal functioning of cells.

The second set of experiments is significant because the results tie in with the suspicion that antibodies are somehow involved in the damaging inflammatory reaction characteristic of rheumatoid arthritis. It was found that antibody-producing cells were inhibited in their ability to form antibodies when they had been preincubated with gold salts at body temperature.

Altogether, Dr. Ziff and his colleagues are pursuing nine arthritis research projects under the continuing grant from The National Foundation-March of Dimes.

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