

Inroads Against a Crippler

Slowly, and without dramatic breakthroughs, arthritic diseases are yielding to steady pressure.

by Faye Marley

Arthritis costs the United States \$2 billion a year and inflicts inestimable agonies on its 13 million victims. Man's oldest known chronic disease, dating back to Java Man, is now under concentrated attack as new drugs and new treatments and the gradual elimination of quackery hold out hope for the future.

Arthritis is a social as well as a medical problem.

As many as 30,000 persons with arthritis apply each year for disability benefits under the Social Security. Well over \$100 million is paid out annually to those who are partially or totally disabled.

Dr. William S. Clark, president of the Arthritis Foundation, says, "Ironically, while less than \$15 million a year is spent directly for arthritis research, more than \$300 million is spent by victims of the disease on worthless and misrepresented drugs and treatments."

Among the quack remedies are treatments ranging from immune milk to uranium. Vibrators and other devices, liniments, food supplements and treatment centers attract victims who are willing to pay any amount for relief.

Doctors are meeting more and more frequently now to discuss the problems of joint disease. Several important meetings have been held in the last few months.

Arthritis loomed large in the meeting on inflammatory diseases sponsored by the Upjohn Company at Brook Lodge in Kalamazoo, Mich., in early June. And just before the recent AMA convention, the American Rheumatism Association and the Arthritis Foundation met in New York.

When rheumatic disease attacks the joints with its torments it is called arthritis (from the Greek word arthros, meaning joint), which in turn is divided into the main categories of rheumatoid (constitutional) and osteo (bone), as well as gout, ankylosing spondylitis and various related ailments. Other kinds of rheumatic diseases involving muscular tendons, ligaments or bursae, are grouped together under the term rheumatism. The effects of rheumatic disease can vary from slight pain, stiffness or swelling to crippling and total disability.



NIH

Hands crippled by rheumatoid arthritis come together in a plea for help.

Osteoarthritis appears to be incapable as the 50s and 60s bring irritation of the joints from repeated wear and tear. Although more common than rheumatoid arthritis, as a rule it is less damaging.

About one-third of those who visit clinics or the offices of physicians for rheumatism have this type. It affects

three times as many women as men, and although it may attack the very young, it usually begins between the ages of 25 and 50.

Help for osteoarthritis was reported last year by investigators at the Medical College of Georgia. They found that a cartilage-bone marrow extract called Rumalon is of value in the treatment

of this degenerative ailment. The drug acts by stimulating the synthesis of a substance called chondroitin sulfate, which is deficient in the cartilage of such patients.

The Georgia researchers explained that Rumalon stimulates the uptake of sulfur in the cartilage, which indicates increased synthesis of chondroitin sulfate. Further investigations and clinical trials are warranted.

Sometimes arthritic diseases run in families, but no one has found a mechanism that would indicate contagion. Some scientists suspect allergy, or the nervous system or hormones. Others believe the cause of rheumatism or arthritis could be a disorder of the metabolic system.

There is some scientific evidence that emotional shock can hasten the first attack of arthritis if a person is predisposed to have the disease. Although it is sometimes considered an old wives' tale, there is also some relationship between weather and arthritic symptoms.

Dr. Joseph Hollander of Philadelphia showed weather effects when he tested arthritis patients in a climate chamber in which humidity could be raised or lowered along with the temperature and barometric pressure. When two of these features were changed at the same time, the patients experienced symptoms.

One of the principal theories of the cause of rheumatoid arthritis—a constitutional rather than degenerative disease—as in a number of other mysterious diseases, is the concept of autoimmunity: immunity against one's own body processes.

This theory holds that the body, for some unknown reason, produces abnormal antibodies that are directed against its own tissues rather than against foreign material. Rheumatoid arthritis patients show elevated gamma globulin levels. The antibody-like nature of the characteristic rheumatoid factor—complex, specific proteins found in the serum of patients with the disease—is another piece of evidence supporting the autoimmunity concept.

Until recently, deficiency of antibodies in some patients' blood had been a powerful argument against the antigen-antibody theory. Victims of rheumatoid arthritis frequently have the disease called agammaglobulinemia, associated with antibody deficiency. Rheumatoid factor could not be found.

Now, however, at the University of Pennsylvania, scientists working under grants from NIAMD have refuted this argument. They have demonstrated that in agammaglobulinemia, immunoglobulins that are not detectable in the blood may be found in the joints.

University of Texas scientists report a study that offers hope for effective

treatment in rheumatoid arthritis and in other diseases being associated with immune mechanisms. They injected 30 rats with a solution which induced a form of arthritis.

They observed the reactions of 10 of these animals treated with rabbit antilymphocyte serum, which successfully suppressed the usual arthritic reaction. Only one of the 10 rats developed a moderate arthritis.

In contrast, the other 20 all developed marked polyarthritis. Now studies are underway to test the possible applicability to treatment of humans.

There are other possibilities.

In their search for a cause of rheumatoid arthritis, investigators are encouraged by recent evidence suggesting that a type of microorganism called mycoplasma could be involved. Mycoplasma fall somewhere between bacteria and viruses in size and other properties.

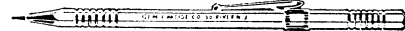
They take many forms—the organism is not rod-like and has no rigid outer coat as a virus does. It is fragile, pliable, and unlike bacteria, has no cell wall. Also it can be grown on lifeless media supplemented with nutrients, while viruses must grow on other cells. Mycoplasma are responsible for pleural pneumonia.

Thirty-five arthritis researchers at a recent meeting concluded that although evidence linking mycoplasma infection to rheumatoid arthritis is fragmentary, it is sufficient to encourage further research.

They suggest that standard reference sera (immune blood fractions capable of reacting with mycoplasma) be made available in research banks for the use of investigators, and that medical and veterinary resources for the study of mycoplasma be brought together.

Bedsonia microorganisms are another group—in this case, viruses—that have gained research attention in the past year. University of California investigators produced arthritis in monkeys by injecting them with Bedsonia viruses isolated from humans with Reiter's syndrome, which is a three-way ailment including not only arthritis but urethritis, meaning inflammation of the urethra—the canal leading from the bladder—and conjunctivitis, meaning inflammation of the mucous membrane, or conjunctiva, lining the inner surface of the eyelids. NIAMD reported this work in connection with the fiscal 1968 Congressional appropriations hearings, pointing out that the research could eventually have important bearings on a whole series of disorders that manifest themselves as rheumatoid arthritis or related arthritic processes.

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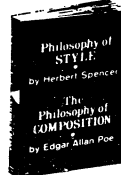


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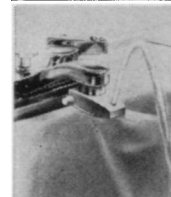
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