Conquering inflammatory diseases

New, nature-based medical treatments are on the verge of making breathtaking strides against a host of chronic diseases, such as psoriasis, arthritis and possibly even multiple sclerosis. A class of pharmaceuticals called biologic" therapies -- drugs derived from living cells instead of synthesized chemicals -- promises to change radically the treatment of diseases caused by inflammation of the body's tissues. Four new drugs either on the market or in prospect are leading the way in the field.

This development has been made possible, experts said, by painstaking progress in the fields of genetics, microbiology and bioengineering, all of which have led to the development of medicines that can interfere with inflammation at the molecular level.

"Many inflammatory diseases seem to have a genetic component, and now we see that many are triggered by other processes, some in the workings of the immune system," said Dr. Anthony Gaspari, professor of dermatology at the University of Maryland in Baltimore.

One such process, Gaspari explained, involves the malfunction of cytokines -- proteins the body uses to trigger inflammation. Sometimes, the trigger can backfire and lead to the overproduction of skin in psoriasis, the destruction of the myelin -- the cells surrounding nerve fibers -- in multiple sclerosis and the abnormal growth of connective tissue in the MS-like illness, scleroderma.

All of these chronic and progressive disorders seem to be rooted in an internal biochemical mechanism that can be addressed by an individually tailored biologic treatment, Gaspari said at a recent American Medical Association briefing on the new therapies.

"So what is now proving so potent for rheumatoid arthritis, psoriatic arthritis and psoriasis might be leading us to new therapies for the other, apparently related disorders, like MS and scleroderma," he said.

Until recently, only toxic drugs such as methotrexate were available for patients with moderate-to-severe psoriasis. In less severe cases, skin creams and ultraviolet light therapy often could be used successfully.

"Biologic therapies now give us a powerful means to confront this often debilitating condition," Dr. Kenneth Gordon, associate professor of dermatology at Loyola University Medical Center in Maywood, Ill., said. "So far, we haven't seen significant long-term side effects, and we will keep our eyes open for them. Biologics are our future in this field -- for the next decade and maybe beyond."

In the case of psoriasis, biologics block the inflammatory response that leads to overproduction of skin cells. The disease is characterized by various degrees of red, scaly patching of skin.

Patients receive the medications by injection -- either subcutaneous, or under the skin, or intramuscular -- once a week or every other week. This represents an improvement over the current, twice-daily applications of creams and ointments, which can be cosmetically unacceptable or