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OUR OWN CELLS MAY BE THE ANSWER TO TREATING CHRONIC BACK PAIN

Dr. Jason Arora with Atlantic Spine Center says blood, stem cells shown effective in damaged spinal discs, offers tips.

Our own cells may be the answer to eliminating chronic neck or back pain and repairing damaged discs in our spine.

So, comments interventional spine and pain management specialist Jason Arora, DO, who says using a patient's blood plasma, which is rich in antibodies, enzymes and proteins, or stem cells harvested from a patient's bone marrow are proving effective therapies for eliminating discogenic pain, namely pain caused by deteriorating or injured spinal discs, and restoring disc function.

Platelet-rich plasma injections (PRP) and stem-cell treatments are ushering in a "new dawn" in orthopedic care, says Dr. Arora, a physician and member of the team, at the Atlantic Spine Center, based in the New Jersey-New York area.

"These biological, restorative approaches may be the 'Holy Grail' for which we have been searching to bring relief to our patients who fail conservative treatments like exercise, physical therapy and medications, but who are unable, or do not want, to undergo surgery," Dr. Arora states.

Many researchers concur.

A scientific study review published in March 2018 in the *Journal of Spine Surgery* indicates clinical evidence of the safety, effectiveness and feasibility of PRP therapy for discogenic back and neck pain. In fact, authors of the review call PRP a "new and exciting" prospect for treating degenerative disc disease and other musculoskeletal disorders.

Another 2018 report – this one published in July in the *Biomedical Journal of Scientific and Technical Research* -- concludes that bone marrow concentrate, which is frequently taken from the patient's pelvis or hip bone and contains stem cells useful in healing, is an "attractive modality to treat lower back pain due to its low rate of adverse effects, compared to surgery."

Lower back pain is reportedly the second leading cause of disability in the United States, according to the Centers for Disease Control and Prevention, and much of that pain can be attributed to degenerative disc disease, Dr. Arora says.

Imaging studies have shown presence of disc disease in about 40 percent of persons under age 30 and 90 percent of those over 50. That's because incidence of this disease increases with age.

"Spinal discs are complicated structures that sit between the vertebrae and act as shock absorbers," Dr. Arora explains. "They contain a gelatin interior and an exterior of collagen tissue known as the annulus fibrosus. As we age, discs can lose water content, become brittle and deteriorate."

Of course, not all deteriorated spinal discs cause discogenic pain, but degenerative disc disease can initiate a cascade of physical events that ultimately irritate the nerve fibers surrounding the disc and lead to complications like spinal stenosis, a compression of the spinal canal and nerve roots in the canal.

In both PRP and stem cell therapy, a patient's own biologic material is withdrawn, processed in a centrifuge and then reintroduced to the body by injection into the offending spinal disc.

PRP simply involves the withdrawal of blood – akin to having a blood test, Dr. Arora says.

Whole blood contains more than 90 percent red blood cells and only about 1 percent white blood cells. The centrifuge process removes most red cells, which can "aggravate" a patient following treatment, and leaves a platelet-rich fluid. "White blood cells remain in the concentrate because they are difficult to remove, number one, and because they have antibacterial properties that lower risk of infection and can aid healing," Dr. Arora says.

In stem-cell therapy, cells obtained from bone marrow or adipose (fat) tissue are centrifuged to identify and obtain the specific, "primitive" cells needed to encourage and stimulate regeneration of the collagen when injected into a damaged spinal disc.

Dr. Arora agrees that more research is needed to perfect these techniques and improve outcomes. For example, some experts are warning against PRP to treat orthopedic injuries in children and adolescent athletes, due to insufficient study of the therapy's safety and impact in the young. Others point to needed improvements and standardization of centrifuging processes.

However, Dr. Arora remains excited about the future of these new approaches.

"All of us carry within ourselves the molecular material for restoring and returning damaged or aged tissue to health," he says. "That's what makes these biologic therapies so promising. They are utilizing our own resources to treat injury and disease successfully."

Atlantic Spine Center is a nationally recognized leader for endoscopic spine surgery with several locations in NJ and NYC. www.atlanticspinecenter.com, www.atlanticspinecenter.nyc