Cortisone Steroid Injections

the good and the bad

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Injections of cortisone - a steroid hormone produced naturally by the adrenal glands and that can also be synthesized - is a therapy designed to minimize damage to joints. The relief provided can enable an athlete to continue the physical activity, or, in the case of a more severe injury, can be part of a rehabilitation programme.

Cortisone is essential for proper body function. Its absence causes Addison's disease. If untreated, the disease is fatal. Treatment consists of administration of synthetic cortisone (brands include DepoMedrol, Celestone, and Kenalog).

In the larger amounts used for therapy, cortisone acts by easing inflammation - a process in which the body's immune system (especially the white blood cells) reacts to what is erroneously perceived to be an invasion by a foreign substance, or infection. The resulting joint stiffness can restrict movement and cause pain. If relief is not provided, inflammation can be long lasting (chronic).

While a steroid, cortisone is different from anabolic steroids, which are derived from a compound called testosterone. Anabolic steroids can cause serious side effects in athletes seeking to gain muscle mass and strength from their overuse, and are banned from the Olympics and other competitions.

Cortisone injections are typically used to provide relief from inflammation in joints, including the elbow (different injuries are popularly dubbed "tennis elbow" and "golfer's elbow"), the shoulder (such as for the inflammation of the tendon in the rotator cuff), and the knee. Typical conditions that can benefit from cortisone injections include bursitis (inflammation of the synovial fluid-containing sacs called bursa), arthritis, tendonitis (inflammation of tendons), plantar fasciitis, back pain due to injured discs, Ilio Tibial Band Syndrom (ITB) and carpal tunnel syndrome.

As inflammation eases following the injection of cortisone, the associated pain will ease. However, cortisone itself is not a pain agent. Pain is also a signal that a joint, tendon, or muscle is injured. Lessened pain may tempt an athlete into resuming active training, when a period of reduced or no training following cortisone administration is often recommended.

Injections of cortisone into tendons are avoided, since they could be weakened and rupture. Also, the same site should receive only a maximum of three treatments each year, since thinning of the cartilage and skin around the injection site and weakening of tendons can occur. More frequent injections have been associated with permanent joint damage.

Injection is via a needle. Often the needle is small and discomfort is minimal. However, sometimes a larger needle is necessary or manipulation of the needle following its insertion is required to properly deliver the cortisone to the affected site. Then, discomfort can be more pronounced and longer lasting. Even with the discomfort, the benefit from the injection can outweigh the continued inflammation that would result if the procedure was not done. Additionally, cortisone can be injected along with medication that reduces the pain of injection. Examples of anesthetics used include lidocaine and bupivicane.

The benefit of injected cortisone is that it is released into the circulation slowly, so its anti-inflammatory effects last a long time. Relief, which typically begins a day or so after an injection, can then last for months.

Despite the benefit derived from its use, cortisone injections are not without side effects. These include thinning of the bone (osteoporosis), weight gain, stomach upset (which can led to formation of an ulcer), and compromised immune function (and a consequent

increased risk of infection). The most common side effect is known as "steroid flare." This occurs when the injected cortisone crystallizes, causing pain. The pain lasts one or several days until the crystals dissolve. As well, as with any procedure that involves breaching of the skin barrier, infection is a possibility. This risk, however, is minimal, especially if the area is swabbed with an antibacterial agent like iodine or alcohol before the injection.

A very serious side effect of a cortisone injection is the death of the bone at the injection site. The condition, called avascular necrosis, occurs most commonly in the hip, knee, and shoulder. The condition sidelined football and baseball star Bo Jackson in the early 1990s (although in Jackson's case, the malady was caused by a traumatic hit delivered in a football game).

Osteoporosis can occur with cortisone use because the hormone can interfere with the body's production of vitamin D, which in turn limits the absorption of calcium from food. Since calcium is an integral part of bone, its diminished level affects bone growth and replacement.

The body's manufacture of prostaglandin and leukotriene can also be curtailed by excess cortisone, which adversely affects cartilage.

Mainly because of these potential consequences, cortisone injections are typically done only when physical therapy or other anti-inflammatory agents (typically, nonsteroidal anti-inflammatory drugs such as ibuprofen, aspirin, and naproxen) have failed.

Still, with prudent application by an experienced physician, a cortisone injection can be a valuable aid to rehabilitation from athletic injury

References: www.faqs.org/sports-science