Corticosteroid

Corticosteroids are a class of chemicals that includes the steroid hormones that are produced in the adrenal cortex of vertebrates, and synthetic analogues of these hormones. Corticosteroids are involved in a wide range of physiological processes, including stress response, immune response, and regulation of inflammation, carbohydrate metabolism, protein catabolism, blood electrolyte levels, and behavior.

Glucocorticoids such as cortisol control carbohydrate, fat and protein metabolism, and are anti-inflammatory by preventing phospholipid release, decreasing eosinophil action and a number of other mechanisms.

Mineralocorticoids such as aldosterone control electrolyte and water levels, mainly by promoting sodium retention in the kidney.

Targeted interventional delivery of corticosteroids remains a mainstay of treatment for spinal pain syndromes because this approach has a wider therapeutic index than other approaches. The best evidence for analgesic efficacy is in subacute radicular syndromes associated with new-onset or recurrent lumbar radiculitis. Complications often relate to drug delivery technique as much as actions of the steroid itself and require careful consideration and vigilance by the administering physician. Considerable uncertainty persists concerning which patients with chronic pain are most likely to benefit from corticosteroid injections. Matching this treatment option with specific spinal pain syndromes remains a major challenge [1)]

see Epidural corticosteroid injection.

Corticosteroids are commonly used perioperatively to control cerebral edema and are frequently continued throughout subsequent treatment, notably radiotherapy, for amelioration of side effects. The effects of corticosteroids such as dexamethasone on cell growth in glioma models and on patient survival have remained controversial.

The role of corticosteroids in the treatment of patients with aneurysmal subarachnoid hemorrhage (SAH) has remained controversial for decades. Recent studies have suggested that the administration of corticosteroids in SAH patients is associated with favourable outcomes. Given their significant adverse effects, it is essential to identify those patients who will benefit from treatment with corticosteroids [2)].

1)
Schilling LS, Markman JD. Corticosteroids for Pain of Spinal Origin: Epidural and Intraarticular Administration. Rheum Dis Clin North Am. 2016 Feb;42(1):137-55. doi: 10.1016/j.rdc.2015.08.003. Review. PubMed PMID: 26611556.
2)
Czorlich P, Sauvigny T, Ricklefs F, Abboud T, Nierhaus A, Vettorazzi E, Reuter DA, Regelsberger J, Westphal M, Schmidt NO. Impact of dexamethasone in patients with aneurysmal subarachnoid haemorrhage. Eur J Neurol. 2017 Feb 17. doi: 10.1111/ene.13265. [Epub ahead of print] PubMed PMID: 28213906.