

(ESIs)

Epidural steroid injections are often offered to patients who have intractable back pain, including those who have Failed Back Surgery Syndrome.

However, there is plenty of evidence that ESIs are poorly effective for this purpose and moreover carry significant risks of worsening the patient's condition, especially if there is a pre-existing spinal problem, which given the population of patients involved is in the majority of cases.

Depo-Medrol (Depomedrone) is a steroid preparation administered epidurally or intrathecally in the treatment of acute back problems as well as Failed Back Surgery Syndrome (FBSS).

The rationale for its use is that the steroid (methylprednisolone) is an anti-inflammatory agent, which is aimed at reducing nerve root inflammation that may be caused by a variety of problems such as a prolapsed disc.

Although in itself beneficial, the drug is in a solution that contains preservatives such as polyethylene glycol (also used in antifreeze).

Other preparations such as Kenalog use benzyl alcohol.

It should be noted that alcohol is a recognised cause of toxic neuropathy, so adverse reactions are unsurprising.

NOTE: usually ESIs also contain local anaesthetic (LA) preparations for more immediate pain relief (steroid is aimed at longer term effect): these LAs also have been recognised as causative factors for arachnoiditis, partly because of their preservatives, but also due to the vasoconstrictive properties LAs themselves have.

Malinovsky ([\[i\]](#)) suggests that "neurotoxicity can result from decrease in neuronal blood supply, elicited by high concentrations of the solutions, long duration exposure to local anaesthetics, and the use of adjuvants."

Some authors suggest that arachnoiditis occurs as a result of the vasoconstrictive component of the anaesthetic, whilst others say that contaminants ([\[ii\]](#)) or preservative agents are responsible.

So ESIs contain double jeopardy!

As with ANY treatment, the best way of assessing the value of ESIs is to look at the BENEFIT:RISK RATIO: i.e. weigh up whether there possible beneficial results, how great they may be and how long-lasting versus the potential risks of adverse effects, in particular, those that are persistent and/or irreversible.

[\[i\]](#) Malinovsky JM, Pinaud M *Ann Fr Anesth Reanim* 1996; 15(5): 647-58 [Neurotoxicity of intrathecally administered agents.]

[\[ii\]](#) Sghirlanzoni A, Marazzi R, Pareyson D, Olivieri A, Bracchi M *Anaesthesia* 1989 Apr;44(4):317-21 Epidural anaesthesia and spinal arachnoiditis Sklar EM, Quencer RM, Green BA, Montalvo BM, Post MJ *Radiology* 1991 Nov; 181(2): 549-554 Complications of epidural anesthesia: MR appearance of abnormalities.