ROLE OF DEFLAZACORT IN INTERVERTEBRAL DISC PROLAPSE

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Abstract

Intervertebral disc prolapse is not an uncommon condition. Oral corticosteroid is one of the treatment modality among the various available approaches. In the present case, Deflazacort, a derivative of Prednisolone with equal efficacy and lesser adverse drug reaction profile in same anti-inflammatory doses is used to treat the condition. We found that Deflazacort is useful drug along with other supportive drugs for the management of the condition.

Keywords: Corticosteroid, Deflazacort, Intervertebral disc prolapse

Case Report

An adult male aged 38 years, weight 60 kg with history of heavy physical activity including driving reported with moderate low backache since 3 months and severe pain since last 10 days. Initially it was low intensity pain but aggravated day by day. Muscular pain was diagnosed and tablets Aceclofenac 100mg with Paracetamol 325mg daily and Pantaprazole 40mg once daily for 5 days and bed rest advised. After one week patient returned with severe low back pain radiating to entire right leg. History suggested involvement of severe physical activity and avoidance of bed rest. Clinical examination suggested right lower limb
radiculopathy with loss of power in right great toe and positive straight-leg raise test. On MRI examination, diffuse posterior protrusion with large posterocentral extrusion with inferior migration of L4-L5 disc was causing severe compression of thecal sac, bilateral budding and exiting nerve roots which was causing moderate narrowing of spinal canal and complete obliteration of bilateral lateral recess was observed. Focal posterocentral protrusion of L5-S1 disc compressing thecal sac, bilateral budding nerve root and causing mild canal narrowing was also observed. Hence, diagnosis as acute L4-L5 and L5-S1 Intervertebral Disc Prolapse with severe Radiculopathy was made.

During the period of Deflazacort administration, Deflazacort induced acne form eruption was observed over the neck, chest, upper abdomen, back and both the arms which was controlled by using 100mg Doxycycline, Adapalene and Benzoyl peroxide gel.

Discussion

Deflazacort is a glucocorticoid used for anti-inflammatory and immunosuppressive action in various diseases. It is a heterocyclic methyloxazoline derivative of Prednisolone with similar clinical efficacy but lesser side effects in comparison to Prednisolone. Deflazacort 6 mg is equivalent to 5 mg of Prednisolone with the average potency ratio of Deflazacort to Prednisolone 0.69–0.89 but the therapeutic dosage ratio ranges from 1:1.2 to 1:1.5. In equivalent doses, immunosuppressive and anti-inflammatory property of Deflazacort is similar to Prednisolone and Methylprednisolone with reduced side effects. Deflazacort suppresses inflammatory response to injury irrespective of type of insult nonspecifically such as reduction of increased capillary permeability, local exudation and cellular infiltration. Several steps of inflammation are interfered, among them the most important is recruitment of inflammatory cells. Inflammatory mediators such as leukotrienes (LTs), platelet aggregating factors (PAF), Tumor necrotic factors (TNF) and other Prostaglandins production is suppressed by negative control of COX and other enzymes. Prostaglandins (PGs) and LTs synthesis is inhibited by inhibition of phospholipase A enzyme which is responsible for release of arachidonic acid from membrane phospholipids needed for PG and LT synthesis. Inhibition of phospholipase A occurs by induction of anti-inflammatory protein lipocortin, which inhibits phospholipase A.

Goldberg H et al, used 15-day tapering course of oral Prednisone in patients suffering from acute radicular pain for 3 months or less due to herniated lumbar disc but observed no improvement in pain with modestly improved functions. Holve RL and Barkan H found very little and insignificant impact of 9-day tapering course of prednisone among 13 cases of acute sciatica with only slightly more rapid improvement in painful situation.
al did not observe any significant difference among intramuscular Dexamethasone and Placebo-recipient patients of prolapsed lumbar disc group. Haimovic IC and Beresford HR also did not observe any significant difference among Dexamethasone and Placebo groups of lumbosacral radicular pain among study involving 33 patients.

Roncoroni C et al, were against the use of systemic corticosteroid therapy for the management of sciatica. In their systemic review and meta-analysis they found several disadvantages of systemic steroid use. Among those, efficacy of systemic steroid was similar to placebo for pain relief, no beneficial effect of therapy and on the return to work parameter, poor tolerance of drugs as number and severity of adverse reactions increased. They also found that surgical intervention was more frequent among the systemic steroid recipients. The literature is not in much favor of use of systemic corticosteroid for the management of prolapsed disc with radiculopathy. But in the present case usefulness of short course Deflazacort, a derivative of Prednisolon, is seen in herniated disc with radicular pain which indicates its future role in such conditions.

Conclusion

In the present case, we found Deflazacort as useful drug along with other supportive drugs like muscle relaxant etc. for the management of prolapsed disc with radiculopathy. It showed only drug eruption as adverse drug event. Large scale clinical trials will be useful to compare its role in the management of intervertebral disc prolapsed.

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References
