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International Journal of Emergency Medicine & Pain Management

Low Dose Methylprednisone and Ketorolac Treatment of Chronic Adhesive Arachnoiditis

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Research Article

Volume 3 Issue 1

Received Date: June 05, 2026

Published Date: July 03, 2026

DOI: 10.23880/ijempm-16000104

Abstract

To date adhesive arachnoiditis has been commonly believed to be untreatable and no treatments have previously been offered. Reported here is a small study of twenty adhesive arachnoiditis patients who achieved symptomatic pain relief with low, intermittent dosages of methylprednisolone and ketorolac.

Keywords: Methylprednisone; Adhesive Arachnoiditis; Ketorolac; Hypoglycemia; Adrenal Suppression; Osteoporosis

Abbreviation: AA: Adhesive Arachnoiditis.

Introduction

Adhesive Arachnoiditis (AA) is an inflammatory spine disease in which cauda equina nerve roots are fused by adhesions to the arachnoid membrane. Heretofore, it has been considered a rare disease, but epidemiologic studies of back pain suggest that it may be present in 1.75 to 8 million people in the United States [1-3]. To date, there has been no treatment for the disease [4,5]. It is notorious in causing severe intractable pain, multiple neurologic impairments, paralysis, a bed-bound state, and premature death [4-9]. We report here a small pilot study with low dose methylprednisolone and ketorolac to ambulatory patients with AA. Both of these agents are known to suppress central nervous system pain and inflammation. Corticosteroids have been a successful treatment for acute AA, but not chronic cases [10].

Methods

Arachnoiditis Hope is a public service organization with the goal of research and education of AA. As part of the project, we review cases and provide diagnostic and treatment guidance to physicians, patients, and families. Twenty patients whose case was reviewed and guidance given to the treating physician within the previous six months are the subjects of this study. The guidance was to provide methylprednisolone and ketorolac in low dosages on 1 to 3 days a week. Individual dosages were methylprednisolone 4 mg and ketorolac oral 10 mg or injectable 15 to 30 mg. Agents were to be taken on different days. Physicians could alter these dosages if they chose to do so. Subjects could remain on any other treatment that they were utilizing. Study participants took the drug combination for 30 to 180 days. This study was approved by the Institutional Review Board of the project's sponsor, The Tennant Foundation. To determine effectiveness of this treatment a questionnaire was completed by the patient and treating physician.

Subject Profile

There were 15 females and 5 males. Ages ranged from 28 to 82 years (mean 58.5 SD 13.54). The length of the disease ranged from 1 to 30 years (mean 11.0 SD 7.9%). Patients listed the cause of their initiating pain to be spine trauma 5 (25%); spine surgery 14 (70%); and an epidural injection or

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spinal puncture 9 (45%). Some patients listed more than one cause or initiating event. Half of the subjects could ambulate without assistance, and the others had various functional physiologic impairments (Table 1).

Function and Physicality of 20 Subjects		
1	Ambulatory without assistance	10 (50%)
2	Partially ambulatory (cane, walker, wheelchair)	5 (25%)
3	Bed-bound some hours	5 (25%)
4	Bed-bound full time	5 (25%)
5	Bladder/bowel dysfunction	8 (40%)

Table 1: Function and Physicality of 20 Subjects.

Results

The majority, 17of 20 (85.0%), reported they had improved pain control (Table 2). Thirteen (13, 65.0%) reported improved physical activity, and 9 (45.0%) reported fewer bed bound days. Subjects reported some specific changes in their pain (Table 3). Eighteen (90%) reported fewer pain flares and 13 (65%) had decreased intensity of flares. Time between flares increased in 16 (80%). Some physical functions were improved: walk farther (12;65%), sit longer (12; 65%), ability to bend (8;40%).

Reported Effectiveness of Methylprednisolone and Ketorolac		
1	AA improved	9 (45%)
2	Better pain control	17 (85%)
3	Improved physical activity	13 (65%)
4	Improved bladder/bowel function	3 (15%)
5	Fewer bed-bound days	3 (15%)
6	Deterioration was stopped or slowed	9 (45%)
7	Status remained the same	1 (5%)
8	Condition worsened	1 (5%)

Table 2: Reported Effectiveness of Methylprednisolone and Ketorolac.

Specific Impacts on Pain Control		
1	Decreased baseline pain	15 (75%)
2	Decreased number of flares	18 (90%)
3	Increased time between flares	16 (80%)
4	Decreased intensity of flares	13 (65%)
5	Burning sensation of feet, buttocks, legs	12 (60%)

Table 3: Specific Impacts on Pain Control.

Discussion

This is a small open label study, so conclusions are limited. No claim can be made that the treatment given here is superior to another to that it can be taken indefinitely.

Both methylprednisolone and ketorolac have well-known side effects. Corticosteroid side-effects include adrenal suppression, hypoglycemia, osteoporosis, and weight gain. Ketorolac can be toxic to the kidney and cannot be taken for over 5 consecutive days [11]. Interestingly, however, the two agents given together may provide significant pain relief [12]. The length of time the subjects took these two agents was limited to a few weeks, so no complications were reported. Low dosages were prescribed which retained their benefits without causing complications. Low dose intermittent use of corticosteroids has been reported to be relatively free of complications [13].

At this time, there is no standard treatment for chronic AA. It is a progressive inflammatory disease which can result in a multiplicity of severe neurologic impairments including loss of bladder, bowel, and sexual function. Paralysis of the lower legs is common, and untreated persons often end up bed or house bound and have a premature death. Suicide is prevalent. Given the option of little or no treatment, the combination of low dose methylprednisolone and ketorolac is a welcome preliminary treatment. Its long-term usefulness is unknown, but this combination brought short-term relief to a small number of chronic AA patients.

This limited study reports a treatment that at least some persons with AA found helpful. To date, no other treatment has been offered. The basic mechanism by which this treatment provides relief is suppression of inflammation. It is an incentive to search for other treatments for this devastating disease.

Conclusion

Low dose, intermittent use of methylprednisolone and ketorolac was reported by a small group of adhesive arachnoiditis patients to provide significant pain relief. This is the first reported study to show that some adhesive arachnoiditis patients can be successfully treated.

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