Epidural Steroid Injection in Korean Pain Physicians: A National Survey

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Background:
Epidural steroid injection (ESI) is one of the most common procedures for patients presenting low back pain and radiculopathy. However, there is no clear consensus on what constitutes appropriate steroid use for ESIs. To investigate optimal steroid injection methods for ESIs, surveys were sent to all academic pain centers and selected private practices in Korea via e-mail.

Methods:
Among 173 pain centers which requested the public health insurance reimbursements for their ESIs and were enrolled in the Korean Pain Society, 122 completed questionnaires were returned, for a rate of 70.5%; also returned were surveys from 39 academic programs and 85 private practices with response rates of 83.0% and 65.9%, respectively.

Results:
More than half (55%) of Korean pain physicians used dexamethasone for ESIs. The minimum interval of subsequent ESIs at the academic institutions (3.1 weeks) and the private practices (2.1 weeks) were statistically different (P = 0.01).

Conclusions:
Although there was a wide range of variation, there were no significant differences between the academic institutions and the private practices in terms of the types and single doses of steroids for ESIs, the annual dose of steroids, or the limitations of doses in the event of diabetes, with the exception of the minimum interval before the subsequent ESI. (Korean J Pain 2014; 27: 35-42)

Key Words:
dexamethasone, dose, epidural, radiculopathy, spinal pain, steroid, survey, triamcinolone.
INTRODUCTION

Spinal pain is a leading cause of disability across the world. Lifetime prevalence rates of low back pain (LBP) range from 60 to 80% of all people in Korea [1,2]. For neck pain, the estimated range varies widely from 20 to 80% [3,4]. Among those who develop LBP, approximately 30% will develop chronic low back pain [5]. Compounding the high socioeconomic burden is the absence of any reliably effective treatment.

There are various schemes for categorizing chronic pain, with the most relevant likely being the classification of neuropathic or nociceptive pain, which influences clinical decisions for nearly all therapeutic options. Between 17 and 55% of patients with chronic LBP were found to have predominantly neuropathic characteristics [6-8]. Since Leivre et al., initiated epidural injections with the use of corticosteroids in 1953 [9], epidural steroid injections (ESIs) have been a cornerstone of a conservative management scheme of radiculopathy, at present being one of the most common procedures for patients presenting low back pain and radiculopathy around the world [10].

Epidural corticosteroid may provide significant pain relief by several mechanisms, i.e., inhibiting the production of arachidonic acid, which is the main mediator of inflammation [11,12]; inhibiting ectopic discharge from unmyelinated C fiber and injured nociceptive fiber; increasing the blood flow to ischemic nerve roots; and relieving central sensitization, such as through the “unwound” mechanism [13-15]. On the basis of these mechanisms of epidural steroid, previous reports suggested that ESIs are highly effective for short-term pain relief [16-19].

Complications associated with the epidural injection of corticosteroids are uncommon. However, a few studies have clarified that frequent ESIs suppress the adrenal gland and disturb the hormonal balance, resulting in an increased risk of developing Cushing’s syndrome [20]. For diabetes patients, epidural steroid injections are assumed to increase blood sugar levels and the risk of glucose intolerance [21]. Neurologic injury due to the embolization of large steroid particles represents one of the most serious complications of ESIs [22,23]. Recently, the risk associated with the epidural administration of contaminated corticosteroids have been highlighted by the devastating outbreak of fungal meningitis in the United States [24].

Thus far, there is no clear consensus on what constitutes appropriate steroid use for ESIs [25], and little information with regard to recommendations or practice guidelines for the use of corticosteroids of ESIs is available. Differences in opinion as to what represents the optimal treatment extend to virtually all aspects of ESIs, including the type and dose of steroids, the frequency of administration, and decreasing doses of steroids used in patients with glucose intolerance, which forces pain physicians to perform ESIs with the arbitrary use of steroids. Therefore, considerable variations in the epidural administration of corticosteroids throughout Korea are being applied. To overcome this problem, the ‘Special Group Publication Committee of ESIs’ of the Korean Pain Society decided to conduct a survey on the corticosteroids used with ESIs in Korea. In attempts to investigate the most commonly used steroids and to determine whether there is any consensus as to what constitutes the optimal steroid injection for ESIs, a questionnaire was sent to all academic pain centers and selected private practices in Korea. Our goal in conducting this survey was to help establish a standard frame of reference for the performance of steroid use for ESIs in the treatment of chronic pain conditions in Korea.

MATERIALS AND METHODS

The survey consisted of a total of 10 questions divided into three parts. The first part elicited information regarding the type and the demographics of the facility participating in the survey, including questions about the physician’s experience and the number of blocks per day. The second section sought information about the methods with which epidural steroid injections were performed, the type of steroid injected, the dose of steroid per block, and the minimum interval between subsequent ESIs. Additionally, we asked about whether there were any differences in steroid dose according to their approaches, such as interlaminar and transforaminal approaches. The third section included questions about whether they decrease the dose of steroid in the patients with diabetes and if so, how much they decrease the dose of steroids injected into the epidural space for diabetic patients (Fig. 1).

From June 1 to July 31, 2013, surveys were sent via e-mail to the 173 pain centers which requested public health insurance reimbursements for their ESIs from the Health Insurance Review and Assessment Service in Korea and were enrolled in the Korean Pain Society; 47 anes-