Epidemiological study of spine cases admitted at Grande International Hospital

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ABSTRACT

Introduction

Our institution is tertiary care centre and referral centre for spine surgery. We like to share the epidemiological parameters of the case treated here.

Methods

This is retrospective, descriptive study conducted from 2013 to August 2018. All the data retrieved from hospital information system of admitted patients and demographic presentations, disease pattern, region of involvement were analyzed.

Result

There were a total of 698 patients. Male were 262(37.5%) and female were 436(62.5%). Age wise distribution ranged from 2 years to 85 years. Maximum numbers of patients were from 31 to 60 years (57.5%) and there were only 3% of cases less than 15 years and above 76 years. 30.2% cases were related to trauma, 29.8% of cases were related to disc pathology, followed by degenerative diseases 13%, infection 9.2%, and 5.4% were of tumors 8.7 % were cases were not classified in the above categories. There were 56.7% cases from lumbosacral region, 16.3% cases from thoracic region, 13.2% cases from cervical region, 5.7% cases were from multiple regions. 0.3% were of generalized nature which could not be classified.

Conclusion

Spinal diseases are more common in female population, more frequent in third to sixth decade of life. Highest numbers of cases were from traumatic cause followed by degenerative disc diseases. Lumbosacral region is most commonly affected.

Keywords: **Spine, Cases, Epidemiological Study**

Introduction

Back pain is a common health problem, with over two thirds of adults suffering from it over their lifetime[1]. Back pain accounts for significant amount of health care cost in developed countries[2]. However, little information regarding back pain epidemiology is available in Nepal.

In most back pain cases, a clear pathoanatomical cause cannot be identified. So it is really difficult to specify specific approach to reduce these event[2]. There are studies which tried to point out the causes of back pain but results are inconclusive[3]. Disc degeneration has long been thought to be a major cause[4]. Yet most studies do not reveal strong associations between disc degeneration and back pain[5].

Methods

This is a cross-sectional study of sample of patients with back problems admitted to the spine department. Patient data from April 2013 to August 2018 were retrieved from hospital information system. Patients were categorized in the diseases pattern which was divided into Trauma, Degenerative, Disc disease, Deformity, Infection, Tumors and Others.

Trauma cases included all non-pathological spine fractures and soft tissue injuries. Degenerative conditions included cervical and lumbar spondylosis, spinal canal and root canal stenosis, ossification of posterior longitudinal ligament (OPLL) and yellow ligament, spondylolisthesis, segmental instability. Disc diseases included disc prolapse, annular tear. Deformity included scoliosis and sagittal plane deformities. Infection included spondylodiscitis, vertebral osteomyelitis, epidural abscess, post-operative spine infection of pyogenic or tubercular origin. Tumors included all the primary or metastatic, benign or malignant tumors affecting the spine. It included vertebral, extradural, intradural tumors. Those conditions which could not be classified in above categories were classified into others eg. spondyloarthopathy, mechanical backache, hydatid disesase.

Regional distribution from basiocciput to C7 vertebrae were classed in cervical region, from T1 to T12 level in thoracic region, from L1 including sacrum and coccyx in lumbosacral region. When involvement occurred in junctional region or more than one region then they were classed in multiple regions. Conditions associated with generalized or systemic disease were considered in 'others' group.

Results

There were a total of 698 patients, 262 males (37.5%), 436 females (62.5%). Age ranged from 2 years to 85 years. Maximum numbers of patients ranged from 31 to 60 years (57.5%) and there were only 3% of cases less than 15 years and above 76 years. 30.2% cases were related to trauma, 29.8% of cases were related to disc pathology, followed by degenerative diseases 13%, infection 9.2%, and 5.4% tumors. 8.7 % cases were not classified in the above categories. There were 56.7% cases from lumbosacral region, 16.3% cases from thoracic region, 13.2% cases from cervical region, 5.7% cases were from multiple regions. 0.3% was of generalized nature which could not be classified.

Table1: Age-wise distribution

Age	n (%)
≤15	21 (3)
16-30	148 (21.2)
31-45	237 (34)
46-60	164 (23.5)
61-75	107(15.3)
76 and above	21 (3)
Median age (Q_3-Q_1)	42 (55-31)
Minimum age , Maximum age (Range)	2, 85 (83)

Table 2: Gender-wise patient categorization

Gender	n (%)
Female	262 (37.5)
Male	436 (62.5)

Table 3: Year-wise patient distribution

Year	n (%)
2013	63 (9)
2014	86 (12.3)
2015	55 (7.9)
2016	150 (21.5)
2017	207 (29.7)
Until August 2018	137 (19.6)
Total	**698 (100)**

Table 4: Disease Categorization

Disease category	n (%)
Degenerative disc disease	208 (29.8)
Deformity	25 (3.6)
Degenerative	91 (13)
Infection	64 (9.2)
Others	61 (8.7)
Trauma	211 (30.2)
Tumor	38 (5.4)

Table 5: Anatomical regional distribution

Region	n (%)
Cervical	92 (13.2)
Thoracic	114 (16.3)
Lumbar	396 (56.7)
Multilevel	40 (5.7)
Others	2 (0.3)

Discussion

Till date there has been no population-based study specifically designed to investigate the lumbar spine and back health of people in Nepal. The epidemiological characteristics of back pain remain largely unexplored. However, there is enormous health problem related to back pain and the government has no specific program to address this issue[6]. To complement knowledge in this area, we compiled this spine audit. In this paper, we include demographic parameters, disease pattern, and regional involvement.

Our center is a tertiary referral center which receives not only daily walk-ins and emergencies but also a lot of cases that could not be managed elsewhere. We have included all the cases admitted under 'Spine Services' in our hospital. The documentation system is state-of-the art electronic medical record system enabling us in compiling accurate data. We hope that this audit will help future researchers from Nepal.

Conclusion

Spinal diseases are more common in female population. Spine cases requiring admission is more frequent in young adults and middle aged population. Highest numbers of cases were from traumatic cause followed by degenerative disc diseases. Lumbosacral region is the most commonly affected.

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