



Research Article

THE PREVALENCE OF SPINAL DEGENERATIVE OSTEOARTHRITIS IN NORTH CHINA POPULATION: THE HANDAN OSTEOARTHRITIS STUDY

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ABSTRACT

Objective To investigate the prevalence of Handan city population in spinal degenerative osteoarthritis and discuss the characteristics and risk factors for this disease

Methods One neighborhood committees and two suburban counties are randomly selected. Drawing the r (village) committee that all residents over the age of 45 epidemiological investigation, questionnaire survey spinal degenerative osteoarthritis disease situation, college visits and physical examination and X-ray fluoroscopy.

Results: The total prevalence rate of spinal degenerative osteoarthritis is 27.3%, the prevalence of 32.6% in rural residents and 22.6% in urban residents; 27.4% in Men and 5.9% in Women. Age, working at the desk, bent down and heavy manual Labour is associated with spinal degenerative osteoarthritis.

Conclusion: Age, working at the desk, bent down and heavy manual Labour are risk factors of spinal degenerative osteoarthritis, should actively intervene to reduce the pathogenic effects of such factors.

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INTRODUCTION

Osteoarthritis (OA) is a degenerative joint disease in middle-aged and old people. The main characteristics of this chronic joint disease are the cartilage degeneration, damage, bone hyperplasia, pain and deformity. The susceptible factors of spinal degenerative OA are various, including genetic, strain, metabolism, lifestyle, nutrition and other aspects. There are regional differences for the incidence of OA^[1-4].

It was related to the regional race, lifestyle, eating, working style, way of walking and obesity. Obesity is a risk factor for osteoarthritis, losing weight can reduce the risk of knee OA in women^[5]. The data of the Chinese center for disease control and prevention showed that the obesity rate is significantly higher than the south in northern China. The chronic disease and its risk factors monitoring data according to a reported that obesity rate in Hebei region is significantly higher than the national average. Handan city is relatively dense and numerous population in Hebei province. To carry out the investigation of the relationship between obesity and joint is very necessary. With the growing elderly population, joint degeneration caused by osteoarthritis patients will also increase. Especially, as part of the human body movement of the spinal degenerative OA will be more and more obviously,

it affects the quality of life for the elderly and the impact on the family and society cannot be ignored. Handan city is a relatively dense and numerous people in Hebei region, there is lack of epidemiological studies in spinal degenerative OA in North China population. To investigate and explore the risk factors and the relationship between various factors and the related policy, health guidance, prevention and treatment decisions reference meaning is self-evident. Therefore, this research was carried out to investigate the epidemiological characteristics of spinal degenerative OA in Handan region, and to explore the correlation between body weight and spinal degenerative osteoarthritis.

MATERIALS AND METHODS

One residents' committee and 2 village committee were randomly selected in Handan city urban and suburban area. Residents aged 45, history of chronic kidney disease, rheumatoid arthritis, with no history of serious joint trauma and Ankylosing spondylitis (AS), or congenital malformations were investigated.

osteoarthritis questionnaires designed by the orthopaedic follow health physical examination and imaging professionals, jointly participate in surveys and field questionnaire records, record (1) demographic information: name, sex, age, weight, height, etc;(2) the sociological materials: economy, eating habits, living environment

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condition, profession, profession position (Bend over, sitting at his desk), professional strength; Local symptoms and signs (3) : Spine tenderness, pain time, Limited spine mobility, after lateral or deformity;(4) make a diagnosis and give treatment: X-ray, and image practitioner for its diagnosis, analgesic drugs or not.(5) the subjects divided into clinical symptoms and no clinical symptoms group. With clinical symptoms and the internal and external double deformities, X-ray films of Cervical vertebra and lumbar is oblique and diagnosis. Diagnostic criteria based on Kellgem classification: 0 level is normal, no osteophyte; Mild osteophyte, level I and level II, osteophyte, level III, but not involving the joint clearance joint clearance moderate stenosis, level IV joint space narrow obviously, subchondral sclerosis. For there are clinical symptoms and radiology X-ray showed Kellgem classification for class II or higher, diagnosis and exclusion of secondary osteoarthritis.

Specialist is responsible for the investigation information input computer, with SPSS 13.0 statistical processing.

1. Use rate than chi-square analysis of age, sex, Body mass index, Body mass index, BMI), professional position, living environment, living habits and so on in the normal group, or the difference of OA group, carries on the statistical description.
2. OA related factors by using Logistic regression analysis, $P < 0.05$ for statistical significance.

RESULT

The survey sample is 1086 people, 1012 valid questionnaires were obtained. Rural city of 427 people in city and 585 people in rural areas; 489 people are Male, 533 people are Female; the age range is 42-82 years. The incidence of spinal degenerative osteoarthritis is 27.3%. The incidence is 27.4% in the Male and 27.2 in the Female. In city, the incidence of cervical vertebra OA is 12.2% and 10.4% in lumbar. In rural areas, the incidence of cervical vertebra and lumbar OA is 9.5% and 23.4%.

According to the survey, this study is less than 70 years old crowd of spinal degenerative OA incidence increased with age, the onset of the main crowd of 50 -70 years. The incidence of cervical vertebra OA is higher in the Women than in the Male. The people of lumber OA is more in the Male. There is no significant statistical difference for the prevalence during the Men and the Female. The incidence of cervical vertebra is no significant statistical difference in urban and rural residents of. The lumbar spine prevalence was significantly higher in rural residents of than that in urban residents. Rural residents are engaged in farming and construction work hard physical (bend) the majority people, urban population more than sedentary people at his desk.

Table 1 The region's spinal OA Logistic regression analysis of related factors

| Spinal OA | variable | β value | OR value (95% CI) | P |
|------------------------------|------------------------------|---------------|-------------------|-------|
| Cervical vertebra and lumbar | Gender | 0.934 | 2.489 | 0.000 |
| | Age | 0.058 | 1.061 | 0.000 |
| | Body mass index (BMI) | 0,087 | 1.071 | 0.014 |
| Lumbar | farming and constructor work | 0.019 | 1.021 | 0.031 |
| Cervical vertebra | sedentary desk | 0.021 | 1.023 | 0.026 |

The incidence of cervical spine OA in urban dwellers is higher than that in rural residents. The gender, age, body mass index, job position (farming, crouch long) as variable to establish multivariate regression equation, the multi-factor Logisitic regression was analyzed (table 1). Age, Long-term farming and construction work (bend), sedentary desk is a risk factor for spinal OA.

DISCUSSION

The epidemiological survey results show that Incidence of lumbar prevalence of rural areas was obviously higher than that of urban population. There is no statistical difference for the incidence of cervical spine OA in the region. The incidence of spinal OA is consistent with previously reported [6]. It may be related to geographical, way of working and eating habits. With the continuous development of urban and rural economy, the continuous improvement of diet and nutrition, risk of spinal degeneration increased gradually. Strengthen the intervention and guidance is necessary for the prevention of spinal degenerative osteoarthritis. As the ceaseless improvement of the quality of life in urban and rural areas, the average life expectancy growing continuously extend, obese, spinal degenerative osteoarthritis OA may increase year by year. Diet intervention, weight control, convenient living and working way and community health education are imperative to improve the level of regional and the quality of life.

The study found that the region's residents high-risk dangerous factors of spinal degenerative osteoarthritis are age, bent down to farming, heavy physical construction work and sitting at his desk. With the development of modern agriculture mechanization, rural residents for agricultural factors lead to severe osteoarthritis will be weakened. However, the number of construction workers are more in rural residents, the number of and sedentary his desk are more in urban. The spinal degenerative osteoarthritis factors still exist. The incidence of female postmenopausal patients with osteoarthritis rise rapidly, remove the age factor, elevatory and postmenopausal estrogen and progesterone levels and an imbalance of the both in the body. Many studies were carried out the related research [7, 8]. In addition, the survey found that the knee OA incidence in women was significantly higher than male. High women than men are in with a BMI may be one of the reasons, but not the only reason [9]. Furthermore, this study found that along with the age growth, OA incidence rise gradually, it has to do with the age growth lead to degeneration. The study found that the spine OA occurrence and intervertebral disc pathological degeneration of cartilage collagen type II about [9]. Also has the study found that degenerative spine OA is associated with genetic mutations [10]. Incidence of spinal OA in this region is related to genetic variation, still need to follow-up research. Reasons may be various, may be associated to the survey sample, some personnel lost to follow-up, decrease of activity in older patients and deaths for other diseases.

In conclusion, the occurrence of spinal degenerative osteoarthritis is relevant with age, bent down to farming, heavy physical construction work and sitting at his desk. The right life and work habits should actively induced to reduce the pathogenic effect of vertebra osteoarthritis, improve the quality of life of local residents.

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