

นิพนธ์ต้นฉบับ

Incidence of HLA-B27 in patients with herniated lumbar disc*

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อุบัติการณ์ของ เอชแอลเอ-บี 27 ในผู้ป่วยโรคหมอนกระดูกสันหลังส่วนเอว
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จากการศึกษาหาอุบัติการณ์ของเอชแอลเอ-บี 27 โดยวิธีลิมฟ์ไฟไซโตท็อกซิก
ไมโครเทสในผู้ป่วยที่ได้รับการวินิจฉัยจากการผ่าตัดว่าเป็นโรคหมอนกระดูกสันหลังส่วน
เอวเคลื่อนที่ จำนวนรวมทั้งสิ้น 65 คน อายุระหว่าง 19-67 ปี เป็นชาย 47 คน
(72.3%) หญิง 18 คน (27.7%) พบว่าเอชแอลเอ-บี 27 ให้ผลบวก 7 ราย ใน
จำนวน 7 รายนี้ 3 รายพบมีอาการหลังแข็งและตรวจพบจากเอ็กซเรย์กระดูกสันหลัง
ส่วนเอว ว่ามีการอักเสบของข้อขาโครอิลิแอคเมื่อหักทั้ง 3 รายนี้ออกจากจำนวนทั้งหมด
คงเหลือผู้ป่วย 62 คน มีผู้ป่วยที่เอชแอลเอ-บี 27 ให้ผลบวก 4 ราย (6.45%)
เมื่อนำค่าที่ได้ไปเปรียบเทียบกับอุบัติการณ์ในคนปกติและในรายโรคข้ออักเสบชนิดซีโร-
เนคคาตีฟ พบว่าไม่พบความแตกต่างกันกับคนปกติ แต่กลับพบว่าความแตกต่างนี้มี
นัยสำคัญทางสถิติ ($P < 0.001$) เมื่อเปรียบเทียบกับโรคข้ออักเสบชนิดซีโรเนคคาตีฟ

ผลที่ได้จากการศึกษานี้อาจจะนำมาใช้ประโยชน์ในการช่วยวิเคราะห์แยกโรคข้อ
อักเสบชนิดซีโรเนคคาตีฟออกจากโรคหมอนกระดูกสันหลังส่วนเอวเคลื่อนที่ ซึ่งเป็น
โรคที่พบได้บ่อยในผู้ป่วยที่มีอาการปวดหลังโดยเฉพาะในระยะแรกของโรคซึ่งอาการ
ยังน้อยและไม่ชัดเจน

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Low back pain is one of the most common problem found in clinical practice. Hirsh and associates¹ estimated that 65% of Swedish population had once in their lives experienced low back symptoms. There are a wide variety of causes of low back pain. However, herniated lumbar disc and the seronegative polyarthritis are among the common etiology². The differential diagnosis between these two conditions is rather difficult, particularly in early cases with atypical signs and symptoms. Recently there had been many reports about the high incidence of HLA-B27 in the seronegative polyarthritis comparing to the normal individual. Although the determination of this antigen may be helpful in diagnosis the seronegative polyarthritis,^{3,4,5,6} it is also necessary to know the incidence of HLA-B27 antigen in herniated lumbar disc before making differential diagnosis between these two conditions. Concerning the incidence of HLA-B27 in herniated lumbar disc, there is no data available in the literature.

In this study, we report our determination of the incidence of HLA-B27 antigen in patients with herniated lumbar disc and also compare the result with the incidence in seronegative polyarthritis and in the normal control group to determine if the difference is statistically significant.

Material and Method

The investigation comprised 65 patients with low back pain who had been diagnosed postoperatively as having herniated lumbar disc. There were 47 men (72.3%) and 18 women (27.7%) of various ages (19-67 years).

The HLA-B27 antigens were determined by means of the lymphocytotoxic test (micro-method) as described by Terasaki & Mc Clelland.⁷

The patients with the presence of the HLA-B27 antigens who showed clinical and roentgenological evidence of sacroiliitis were excluded from this study.

The data was compared with the incidence of this antigen in the seronegative polyarthritis and also in the normal control group (previously reported by our co-authors⁸).

Result

Among the 65 patients studied, the HLA-B27 antigens were detected in only 7 cases. Three of these 7 patients had evidence of sacroiliitis manifested by low back pain with limited range of motion of lumbosacral spine and the X-Ray showed sacroiliac abnormalities. Therefore these 3 cases were excluded from this study.

The incidence of the 4 remaining positive¹ patients in the groups of 62 were compared with the seronegative polyarthritis and the normal control group. (table)

Table Statistical comparison in incidence of HLA-B27⁸

Type of subjects	No. Tested	No. Positive	%Positive	P* value
Herniated lumbar disc	62	4	6.45	-
Normal Control	400	16	4.0	NS**
Ankylosing spondylitis	56	51	91.07	< 0.001
Reiter's syndrome	29	24	82.8	< 0.001
Psoriatic arthritis	10	6	60.0	< 0.001

*compared with herniated lumbar disc by Chi square test.

**statistically non significance

These data indicated that the difference was statistically significant between the seronegative polyarthritis and the selected group of subjected, but there was no difference between the later group and the normal control group.

Discussion

Present differential deagnostic criteria for low back patients lean heavily on the radiological examination.^{2,8} But the interpretation is very difficult, particularly in mild or early cases with atypical signs and symptoms.^{8,9} Several investigators had reported that high percentage of seronegative polyarthritic patients were found to have HLA-B27 antigens (88-96% in ankylosing spondylitis^{5,11}) compared with 4-8% in normal population.^{5,11,12} Therefor, it was recommended to use HLA-B27 antigen in diffential diagnosis of low back pain.^{9,10} But in the absence of data of this antigen in herniated lumbar disc patients, we do not have supporting evidence to differentiate the herniated

disc patients from the seronegative spondylitic patients.

From this study, the difference in the incidence of HLA-B27 antigen between these selected test subjects and the seronegative polyarthritic group was statistically highly significant ($P < 0.001$). Therefore, these findings gave more assurance in the usefulness of using this test as an additional diagnostic tool for the patients with low back pain.

However, the test result should be interpreted cautiously. Since it had both false negative and false positive results (as in normal individual). On the other hand, some patients (3 cases in this series) may harbor both seronegative spondylitis and a herniated lumbar disc, and he may require appropriate therapy for each condition.

Summary

The incidence of HLA-B27 was determined by lymphocytotoxic microtest in 65 patients with low back pain who had been diagnosed postoperatively as having herniated lumbar disc. There

were 47 men (72.3%) and 18 women (27.7%) of various ages (19-67 years). Antigen HLA-B27 was found in 7 cases of these 65 patients. Of our 7 patients with the HLA-B27, 3 showed clinical and roentgenological evidence of sacroiliitis and therefore were excluded from this study. The incidence of HLA-B27 antigen in our remaining 62 cases was 6.45% (4 cases). Comparing to the incidence of HLA-B27 antigen in normal control group the difference was not found to be significant. But the difference was statistically highly significant ($P < 0.001$) between the selected group of subjects and the seronegative arthritic group.

The result of this study would be helpful in making a differential diagnosis between the herniated lumbar disc and the seronegative arthritic patient, particularly in early cases with atypical signs and symptoms.

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