



PREVALENCE OF HLA-B27 IN PATIENTS WITH ACUTE ANTERIOR UVEITIS IN INDORE AT TERTIARY CARE CENTRE: A ONE YEAR STUDY

Pathology

Dr. Sweta Tripathi	Resident, Department of pathology, Mahatma Gandhi Memorial Medical college Indore (M.P) INDIA
Prof. Dr. C.V. Kulkarni	Head of Department of pathology, Mahatma Gandhi Memorial Medical college Indore (M.P) INDIA
Dr. Ashok Yadav	Asso. Prof. Department of pathology, Mahatma Gandhi Memorial Medical college Indore (M.P) INDIA
Dr. Sachin Sharma*	Assis. Prof, Department of pathology, Mahatma Gandhi Memorial Medical college Indore (M.P) INDIA *Corresponding Author
Dr. Gaurav Shelgaonkar	Department of pathology, Mahatma Gandhi Memorial Medical college Indore (M.P) INDIA

ABSTRACT

Background : AAU (Acute Anterior Uveitis) is most common form of uveitis. The human leukocyte antigen HLA-B27 is a class I antigen of the major histocompatibility complex and is strongly associated with AAU. The purpose of the present study is to investigate the distribution of HLA-B27 in patients with AAU of different groups in Indore.

Design and Setting. Study design was cross-sectional and the setting was ophthalmology clinics of Maharaja Yashwant Rao Hospital in Indore where most of AAU patients are followed up.

Methods and materials. Patients with diagnosis of AAU were tested for HLA-B27. Approximately 60 patients were tested for HLA-B27 with the help of flow cytometer in the department of pathology, MYH hospital Indore.

Results. Of all the individuals, 36 were positive (60%) for HLA-B27.

Conclusion. HLA-B27 in our small group of patients is present in 60%. Comparison with other data will be presented in detail.

KEYWORDS

AAU (Acute Anterior Uveitis), HLA-B27, Male (M), Female (F).

AAU (Acute Anterior Uveitis) is most common form of uveitis. Its characterized by acute inflammation of the iris and ciliary body. Pathogenesis behind the AAU is breakdown of blood-aqueous barrier. Breakdown of barrier results in leakage of serum proteins from the uveal vasculature into the anterior chamber which is seen as flare and fibrin formation. About 50% of all cases of AAU are associated with the presence of HLA-B27. The human leukocyte antigen HLA-B27 is a class I antigen of the major histocompatibility complex. The human leukocyte antigen (HLA) system describes the major histocompatibility complex (MHC) in humans. This super locus contains a large number of genes related to immune system functions in humans. Since, the association between the presence of HLA-B27 + tissue type, AAU2 (acute anterior uveitis) was first described in 1973. Of all the known association between HLA and diseases, strongest association is seen in AS (ankylosing spondylitis) the B27 antigen is present in over 90% of patients with AS as compared with B27 prevalence of 8% in Caucasians in general.

Other associated diseases are reiter's syndrome, reactive arthritis, and acute anterior uveitis. These diseases are so strongly interrelated in the presence of B27 and called as B27 associated diseases³ or Seronegative spondyloarthropathies.

Material and Methods

60 patients from the June 2017 to May 2018 with acute anterior uveitis were referred to ophthalmology clinic of M.G.M Medical college associated M.Y.H Hospital, Indore and carefully documented. Particular attention was paid to the following patients having symptoms

1. Duration between onset of symptoms and clinical observation
2. Presence of flare in anterior chamber.
3. Presence of exudate in anterior chamber.
4. keratic precipitates.

After this all the blood samples were tested for HLA-B27 with the help of flow cytometer (Navios Beckman coulter) in the department of pathology, M.G.M Medical college indore

Results-

1. Sex and Age of onset

A total of 60 cases with HLA-B27 associated AAU, including 46 males and 14 females (3.2:1) were enrolled as shown in table I, suggesting significantly higher incidence in male population against the female population. Age of onset ranged from 6 to 75 years. The mean age of onset is 16-30 years for male patients which was significantly younger than female patients with 31-45 years.

Table I- Sex and age of 60 patients with AAU

No. of patients	60	
Sex	M	F
	46	14

2. Detection of HLA- B27 antigen

A total of 60 patients of AAU were analyzed for HLA- B27. Table II shows that 36 were positive for HLA- B27 antigen, including 27 males and 09 females. The positive rate of HLA-B27 was 75.0% (27/36) for males and 25% (09/36) for females.

Table II- Prevalence of HLA-B27 in 60 patients with AAU

HLA-B27	Positive	Negative	
No. of cases	36	24	
	M	F	F
	27	09	19
			05

Discussion

In the population of patients with AAU approximately 76% patients are male and rest of the patients are female, giving the ratio 3.2:1 and age of onset is approximately 16-30 years. The incidence of AS when correlated with sex shows the little variation.

Yuin Wang et al⁵ found the ratio of male and female patient is 2.4:1 and age of onset is 37+ 12 years.

Prevalence of HLA B27/B7 antigen is 60 % in the patients of AAU predominance is seen here also in the male patients. Yang et al⁶ found

75.2% of males with HLA B27/B7 and Wang et al⁵ also reported 70.9% prevalence of HLAB27/B7 in males compared to 29.1 % in females.

Evaluated data is statistically calculated through SPSS 19.0 software and results are significant ($p=0.039$ and $p<0.05$ is significant). Venera Vasilica⁷ et al in 2005 and Pavia et al⁸ in 2000 reported that 67.5 % patients and 50.0% patients of AAU shows the presence of HLA B27/B7.

Conclusion

This is the first study to evaluate the prevalence of HLA-B27 among AAU patients living in area of indore . The population studied includes locals of Indore. The results suggest that prevalence of HLA-B27 among patients is more over similar to the prevalence seen in the West. There is a lack of knowledge about the percentage of HLA-B27 in AAU in Asians .Further studies with larger number of patients and studies that look at the prevalence of AAU and the prevalence of HLA-B27 in healthy localities are needed.

Conflict of interest

There is no conflict of interest.

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