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Evaluation of Serum IgA Antibodies to Epstein-Barr Virus Early Antigens and Viral Capsid Antigens in Nasopharyngeal Carcinoma

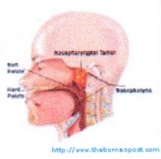
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Background


- Nasopharyngeal carcinoma (NPC) is a cancer in the nasopharyngeal epithelium that is globally rare.
- NPC is a unique cancer with incidence varies widely according to geographic location and ethnic background.
- The incidence is high in certain regions such as in southern China and in Southeast Asia, including Indonesia
- In southern China the incidence is up to 50 cases per 100,000 populations per year, whereas in Europe and US the incidence of this malignancy is less than 1 / 100,000.



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Background

- NPC is the most common head and neck cancer in Indonesia as well as West Sumatra.
- Indonesia has diverse ethnic groups with a variety of lifestyle, The Minangkabau is one ethnic in Indonesia which is the main population of west Sumatra.



Year	Number of Cases
1993	1
1994	1
1995	1
1996	1
1997	1
1998	1
1999	1
2000	1
2001	1
2002	1
2003	1
2004	1
2005	1
2006	1
2007	1

Hospital-Based Cancer Registry at the Dharmais National Cancer Center 1993-2007

Background

- The cause of NPC is suspected to be an interaction between Epstein-Barr virus (EBV) infection, genetic susceptibility and environmental factors.
- EBV infection has been shown to play an important role in the cause of NPC.
- EBV DNA and anti body to EBV can be detected in most NPC patients in endemic area, making EBV-related antibody as important non-invasive test for nasopharyngeal carcinoma.

Objectives

- To investigate serum level and prevalence of EBV EA-IgA and VCA-IgA in nasopharyngeal carcinoma patients in West Sumatra, Indonesia.

Methods

- A total of 15 untreated nasopharyngeal carcinoma patients in Dr. M. Djamil General Hospital Padang were recruited, in parallel with 15 healthy individuals as controls.
- Serum IgA EA and IgA VCA levels were measured by enzyme-linked immunosorbent assay (ELISA).
- Positive criteria were: IgA EA > 8 U/ml, IgA VCA > 8 U/ml.

Results

- The prevalence of serum IgA EA in NPC patients (66.7%) was significantly higher than in the control groups (0.0%) ($p < 0.05$).

IgA EA	NPC frequency (%)	Control frequency (%)
Positive	10 (66.7)	0 (0)
Negative	5 (33.3)	15 (100)

Results

- The prevalence of serum IgA VCA in NPC patients (80.0%) was significantly higher than in the control groups (0.0%) ($p < 0.05$).

IgA VCA	NPC frequency (%)	Control frequency (%)
Positive	12 (80)	0 (0)
Negative	3 (20)	15 (100)

Results

- Nasopharyngeal carcinoma patients had higher IgA EA levels (114.705 ± 136.524) compared to healthy controls (1.749 ± 0.498) ($P < 0.05$)

Group	Mean IgA EA \pm SD (U/ml)	p
NPC	114.705 ± 136.524	$p = 0.0001$
Control	1.749 ± 0.498	

- Nasopharyngeal carcinoma patients had higher IgA VCA (mean 22.958 ± 16.919) compared to healthy controls (1.571 ± 0.572) ($P < 0.05$).

Group	Mean IgA VCA \pm SD (U/ml)	p
NPC	22.958 ± 16.919	$p = 0.0001$
Control	1.571 ± 0.572	

Conclusions

- The IgA antibodies level to Epstein-Barr EA and VCA were elevated in nasopharyngeal carcinoma patients and were more prevalence in NPC patients than those in the controls

Thank you