

# Summary On The Prevalence Of Serum VCA-IgA Antibody Among Thai Patients With Lymphoma: An Implication For Risk And Screening Purpose

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## Abstract

Lymphoma is a common hematological malignancy. Relationship with the Epstein-Barr virus (EBV) was indicated. Anti-EBV serology, immunological test for detection of EBV infection is applied for screening and detection of lymphoma. Of several tests, IgA antibody to viral capsid antigens of Epstein-Barr virus (VCA-IgA antibody) has been mentioned as a valuable test for screening for and early detection of lymphoma. Here, the author performs an appraisal on the prevalence of serum VCA-IgA antibody among Thai patients with lymphoma comparing with healthy control subjects. According to the literature review, 2 reports [6, 7] were recruited for further meta-analysis. According to the meta-analysis, 39 cases and 252 healthy subjects were investigated for serum VCA-IgA antibody. The overall antibody positive rate in the patients and healthy subjects are 35.9 % (14/39) and 2.4 % (6/252), respectively. The odds ratio is 22.96. According to this study, it could be seen that having serum VCA-IgA antibody positive is a very high risk for lymphoma. Of interest, although the lymphoma is high prevalent in Thailand there is no specific recommendation in screening for this disease in high risk population. According to this study, the results suggested that the EBV-specific serum IgA antibodies might be a useful screening test for the cancer in people of high risk.

## INTRODUCTION

Lymphoma is a common hematological malignancy. Relationship with the Epstein-Barr virus (EBV) was indicated [1]. Young and Rickinson said that EBV was found to be widespread in all human populations and to persist in the vast majority of individuals as a lifelong, asymptomatic infection of the B-lymphocyte pool [1]. They noted that despite such ubiquity, the link between EBV and endemic lymphoma proved consistent and became the first of an unexpectedly wide range of associations discovered between this virus and tumors [1]. Concerning the correlation between tumor and EBV, Busson et al recently said that tumor development appeared to require the expression of a small subset of transforming viral RNAs [2]. They also noted that impairment of the interactions of viral proteins with cellular partners or disruption of viral latency might prove to be useful for novel therapeutic strategies [2].

Anti-EBV serology, immunological test for detection of EBV infection is applied for screening and detection of many EBV – related cancers including lymphoma [3]. However, the detection of Anti-EBV IgG is not useful in some specific area such as the tropical Southeast Asia where most of the

populations usually have positive titer for this antibody [4]. Therefore, new more specific Anti-EBV tests are required. Of several tests, IgA antibody to viral capsid antigens of EBV (VCA-IgA antibody) has been mentioned as a valuable test for screening for and early detection of lymphoma [5,6, 7]. Here, the author performs an appraisal on the prevalence of serum VCA-IgA antibody among Thai patients with lymphoma comparing with healthy control subjects. Risk analysis was performed. The author hypothesized that the serum VCA-IgA antibody might be an effective screening test for lymphoma among the Thais.

## MATERIALS AND METHODS

### LITERATURE REVIEW

A literature review to find the previous reports about prevalence of serum VCA-IgA antibody among patients with lymphoma and healthy control subjects in Thailand was performed. The author used the electronic search engine PubMed (www.pubmed.com) in searching for the literatures. The author also reviewed the published works in all 256 local Thai journals, which is not included in the international citation index by the database Thai Index Medicus. Any report that did not present the prevalence in both patients

with lymphoma and healthy control subjects were excluded.

**METANALYSIS**

The available reports were collected and extracted for the data about the prevalence of serum VCA-IgA antibody. Those primary data were used for further metanalysis study. Concerning the metanalysis study, the overall antibody positive rate in the patients and healthy subjects as well as odds ratio were calculated. For operative definition, the overall antibody positive rate is equal to the summative number of positive case/summative number of all case. The odd ratio as well as 95 % confidence interval was calculated according to the general epidemiological study. The SPSS 11.0 for Windows was used for statistical analysis in this study.

**RESULTS**

According to the literature review, 2 reports [6, 7] were recruited for further metanalysis (Table 1). According to the metanalysis, 39 cases and 252 healthy subjects were investigated for serum VCA-IgA antibody. The overall antibody positive rate in the patients and healthy subjects are 35.9 % (14/39) and 2.4 % (6/252), respectively. The odds ratio is 22.96 (95 % confidence interval = 8.1 – 65.0)(Table 2).

**Figure 1**

Table 1: Reports on serum VCA-IgA antibody in Thai patients with lymphoma and healthy subjects.

Reports	Patients with lymphoma		Healthy subjects	
	Total (N)	VCA-IgA antibody positive (N, %)	Total (N)	VCA-IgA antibody positive (N, %)
Srivatanakul <i>et al</i> , 1988	6	1, 16.7 %	152	6, 3.9 %
Srivatanakul <i>et al</i> , 1981	33	13, 39.4 %	100	0, 0 %

**Figure 2**

Table 2: Case-control analysis for the correlation between serum VCA-IgA antibody and lymphoma

Serum VCA-IgA antibody	Patients with lymphoma	Healthy subjects
Positive	14	6
Negative	25	246

**DISCUSSION**

EBV as a member of the herpesvirus family persists lifelong

in the human body and causes diseases associated with virus replication (infectious mononucleosis, oral hairy leukoplakia) as well as neoplastic conditions such as nasopharyngeal carcinoma, B-cell lymphoma, Hodgkin's disease associated with viral latency [8]. In many tropical countries including Thailand, the reported prevalence of EBV infection is very high. There are some comments on the correlation between EBV and lymphoma in those countries [6, 7]. According to this study, there are some efforts to use EBV serological markers for lymphoma in Thailand [6,7].

Here, the author tried to summarize the previous reported on the prevalence of serum VCA-IgA antibody among Thai patients with lymphoma comparing with healthy control subjects. According to this study, it could be seen that having serum VCA-IgA antibody positive is a very high risk for lymphoma. Of interest, although the lymphoma is high prevalent in Thailand there is no specific recommendation in screening for this disease in high risk population. According to this study, the results suggested that the EBV-specific serum IgA antibodies might be a useful screening test for the cancer in people of high risk.

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