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SEROPREVALENCE OF ANTIBODY TO HEPATITIS C VIRUS IN NORTHEASTERN THAI BLOOD DONORS: A PRELIMINARY REPORT

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ถึงแม้ในปัจจุบันจะได้มีการตรวจหาร่องรอยการติดเชื้อไวรัสตับอักเสบซี (anti-HCV) ในโลหิตที่ได้รับบริจาคในหลายประเทศแล้วก็ตาม แต่ก็ยังมิได้มีการตรวจอย่างแพร่หลายในประเทศกำลังพัฒนา เนื่องจากปัญหาค่าใช้จ่ายที่ค่อนข้างสูงและยังไม่ทราบความชุกของการติดเชื้อดังกล่าวในประชากร

การศึกษานี้มีวัตถุประสงค์ที่จะหาความชุกของการติดเชื้อไวรัสตับอักเสบ ซี ในผู้บริจาคโลหิตภาคอิสาณ โดยวิธีอีไลซ่า ด้วยน้ำยาชนิด second-generation

ผลการศึกษาในซีรัมผู้บริจาคโลหิต จำนวน 896 ราย ประกอบด้วยซีรัมจากผู้บริจาคโลหิตเพศชาย 695 ราย เพศหญิง 201 ราย อายุระหว่าง 17 ถึง 60 ปี ตรวจพบ anti-HCV ทั้งสิ้น 0.89% (8 ใน 896 ราย) โดยพบในเพศชาย 7 ราย (1%) และเพศหญิง 1 ราย (0.5%) ผลการตรวจพบที่ได้ไม่มีความแตกต่างอย่างมีนัยสำคัญทางสถิติระหว่างเพศหรือช่วงอายุ ($P>0.05$)

อนึ่ง เป็นที่น่าสนใจที่ได้พบการติดเชื้อไวรัสตับอักเสบ บี (HBsAg) ร่วมกับไวรัสตับอักเสบ ซี ถึง 3 ราย ในผู้ที่พบร่องรอยการติดเชื้อไวรัสตับอักเสบ ซี 8 รายดังกล่าว

ABSTRACT

Although screening for anti-HCV in blood donors has been introduced in several countries, it is not yet widely implemented in developing countries, due to increasing cost and unknown prevalence rates among different populations.

This study was undertaken to study the prevalence of anti-HCV in Northeastern Thai blood donor by second-generation ELISA reagent (UBI HCV EIA).

Sera of 896 blood donors were screened for anti-HCV. There were 695 males and 201 females. The age range was 17-60 years.

The prevalence rate for anti-HCV in our blood donors was 0.89% (8 in 896). Anti-HCV was detected in 7 of 695 males (1%) and only one in 201 (0.5%) females. The results demonstrate no statistical difference according to sex or age. However, it was interesting that co-infection with HBV which HBsAg was also detected, existed in 3 of the 8 who were seropositive for HCV.

INTRODUCTION

Hepatitis C virus (HCV) is one of the etiological factors in posttransfusion non-A, non-B hepatitis (1,2,3,4), chronic liver disease and hepatocellular carcinoma (5,6,7,8). Prevalence of anti-HCV among blood donors from various populations in different countries has been reported, it varies from 0.2 to 1.5% When using the first-generation ELISA technique (9). Although screening for anti-HCV in blood donors has been introduced in several countries, it has not been widely implemented in developing countries, due to the enormous cost and unknown prevalence rates among different populations.

This is a preliminary report on anti-HCV prevalence in Northeastern Thai blood donors as revealed by using the second-generation ELISA reagent.

MATERIALS AND METHODS

serum samples

The serum sample were obtained in August and September, 1992, from 896 random Northeastern Thai blood donors in the Blood Transfusion Centre, Faculty of Medicine, Khon Kaen University. There were 695 males and 201 females with an age range from 17 to 60 years. The serum samples were collected and stored at-30°C until tested.

Serological assays

Anti-HCV was tested using the second-generation ELISA-UBI HCV EIA (United Biomedical Inc. New York., U.S.A.) The initial positive samples were retested and repeatedly-reactive samples were considered as positive.

The presence of HBsAg was also tested for in the positive anti-HCV serum samples using the ELISA HBsAg-EIA Duomab (Roche, Switzerland).

The testing procedures were as specified by the manufacturer.

RESULTS

The results of anti-HCV testing in 896 blood donors are shown in Table I. The prevalence of anti-HCV was 0.89% with a prevalence of 0.5% in females and a prevalence of 1.007% in males. These differences were not statistically significant, however ($P>0.05$).

TABLE I ANTI-HCV IN BLOOD DONORS

Sex	Anti-HCV		Total
	Positive (%)	Negative (%)	
Male	7 (1.007)	688 (98.993)	695
Female	1 (0.5)	200 (99.5)	201
Total	**8 (0.89)**	**888 (99.11)**	**896**

The prevalence of anti-HCV in different age groups was also analysed and is presented in Table II. The results demonstrate no statistically significant difference (P>0.05)

TABLE II ANTI-HCV IN DIFFERENT AGE GROUPS

Age interval	Number tested	Anti-HCV positive (%)
17-30	626	6 (0.96)
31-40	190	2 (1.05)
40-60	80	0
Total	**896**	**8 (0.89)**

Table III shows 3 positive HBsAg donors among 8 anti-HCV-positive blood donors

TABLE III HBsAg IN ANTI-HCV-POSITIVE DONORS

Anti-HCV only	Anti-HCV+HBsAg	Total
5 (62.5%)	3 (37.5%)	8

DISCUSSION

The prevalence of anti-HCV detected in Northeastern Thai blood donors in this preliminary study falls within the prevalence range already reported in various populations around the world (9), including that found in the Thai National Blood Centre in Bangkok which is about 1.4 percent (Tranprasert S, et al: personal communication). However, the sample size in our study may not be enough to reveal the actual figure. We are now continuing to screen for anti-HCV in additional blood donors, multi-transfused, liver disease and hepatocellular carcinoma patients.

The second-generation ELISA reagent for anti-HCV screening was reported to be more sensitive and more specific than the first-generation HCV ELISA reagent and also better for early diagnosis of HCV infection (10,11,12). Therefore, it is worthwhile to attempt to prevent posttransfusion HCV infection by using the secont-generation ELISA reagent for screening of anti-HCV in blood donors, eventhough confirmation testing is not affordable.

It is interesting that co-infection with HCV and hepatitis B virus (HBV) was found in 3 out of 8 anti-HCV positive blood donors. Therefore, co-infection with HBV and HCV may not be uncommon in our population. Fatal liver

disease may develop in these co-infection subjects (8). Although anti-HCV testing has not yet been introduced into our blood donor screening program, routine HBsAg screening could diminish the risk of posttransfusion HCV infection from co-infected blood donors.

We believe that anti-HCV testing is necessary and we would like to introduce it into our blood donor screening program as soon as possible.

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