Original Articles

Comparative Study of Serum Dehydroepiandrosterone Sulfate Levels in HIV-1 Infected and HIV-1-seronegative Royal Thai Army Conscripts

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Background: Around the past 15 years, there are evidences that the adrenal androgen dehydroepiandrosterone (DHEA) and its sulfoconjugated derivative (DHEA-S) have some roles in immunity against HIV viruses. Determining the true and reliable mean serum DHEA-S level by adjusting related factors (covariates) which can affect serum DHEA-S level is essential for fully understanding natural changes of this hormone in healthy young men and asymptomatic naive HIV-infected young men. Objectives: To determine the serum dehydroepiandrosterone sulfate (DHEA-S) levels in HIV-1 infected Thai military conscripts compare to HIV-1-seronegative Thai military conscripts. Design: Cross-sectional analytic study. Setting: Armed Forces Research Institute of Medical Sciences (AFRIMS), a research center. Research Methodology: We studied left-over serum samples of selected sample population. This study included 72 HIV-1 infected and 199 HIV-1-seronegative serum samples of Royal Thai Army Conscripts in round of induction May 2006. The serum samples were tested for serum dehydroepiandrosterone sulfate levels, hepatitis B surface antigen, anti hepatitis C virus antibody, rapid plasma reagin, and HIV-1 subtypes B, E, and D IgG-Capture enzyme immunoassay. Results: The median serum DHEA-S levels in HIV-1 infected group and HIV-1-seronegative group were 1.23 and 1.42 micrograms/mL, respectively. There was significant difference in serum DHEA-S levels between two groups (p=0.037). Conclusion: Serum DHEA-S levels in asymptomatic HIV-1 infected Thai military conscripts were lower than serum DHEA-S levels in HIV-1-seronegative Thai military conscripts statistically significantly.

Key Words: Dehydroepiandrosterone HIV-1 Thai conscript

interleukin-2 (IL-2) secretion from T lymphocytes. IL-2 is a major cytokine in stimulating CD4 lymphocytes production. The level of change in the cortisol/DHEA ratio could be predictive of progression to AIDS in HIV-infected individuals.²

Dehydroepiandrosterone (DHEA) and its sulfoconjugated derivative (DHEA-S) are adrenal androgens secreted by the adrenal cortex. DHEA-S is major form of DHEA in the body. The well-established fact that DHEA and DHEA-S concentrations decrease progressively with age has suggested a preventive role for DHEA and/or DHEA-S in ameliorating the signs and symptoms of the aging process.³

Because HIV infection is a blood-borne viral infection, HIV-infected patients may have other blood-borne infections such as hepatitis C virus (HCV) infection, hepatitis B virus (HBV) infection and syphilitic infection.

The blood levels of DHEA-S in healthy population are in the range of 100-400 micrograms/deciliter or 3-12 micromoles/liter. DHEA and DHEA-S are transformed into Dihydrotestosterone and 17β-estradiol at peripheral tissues. In the presence, the control and regulation of the release of adrenal sex steroids are not completely understood. However, it is known that adrenal secretion of DHEA and DHEA-S increases in the children at the age of 6-8 years, and values of circulating DHEA-S peak between the ages of 20 and 30 years. Thereafter, serum levels of DHEA and DHEA-S decrease markedly. At 70 years of age, serum DHEA-S levels are at approximately 20% of their peak values and continue to decrease with age. This 70-95% reduction in the formation DHEA-S by the adrenal glands during the aging process results in a dramatic reduction in the formation of androgens and estrogens in peripheral target tissues. Despite the marked decrease in the release of DHEA as the individual ages, this is not paralleled by a similar decrease in ACTH or cortisol release. The clinical impact of this age-related efficiency in DHEA production is not fully understood but may play an important role in the regulation of immune function and intermediary mechanism, among other aspects of human physiology.³

Low endogenous levels of DHEA and/or DHEA-S have been associated with diseases such as lupus,⁴ cancer, and diabetes. Circulating concentrations of DHEA and DHEA-S resulting from endogenous production or hormone supplementation may also be relevant in psychiatric illness. Drugs such as some central nervous system agents⁵, some antihypertensive drugs⁶ may significantly increase or decrease circulating concentrations of these adrenal androgens by various mechanisms. The effect of alcohol on DHEA and DHEA-S concentrations, however, has not been studied extensively, and results of studies are conflicting. Nagata reported a trend for increasing serum DHEA-S concentrations with increasing alcohol consumption in post menopausal Japanese women; the model controlled for age and history of hysterectomy (p for trend = 0.01).⁷ Cronholm studied the effect of alcohol on DHEA-S concentrations. In this study, ethanol 0.72 g/kg was administered orally to 6 healthy men (ages 24-40) in the morning, and serial samples were obtained through 480 minutes. They found that ethanol decreased DHEA-S concentrations.⁸ The majority of studies support the observation that smoking nicotine-containing cigarettes results in elevated concentrations of DHEA and/or DHEA-S by stimulation of release of antidiuretic hormone from posterior pituitary gland and release of ACTH from anterior pituitary gland.⁹ Khaw evaluated morning plasma hormone concentrations in 233 elderly women (ages 60-79) and reported that DHEA-S concentrations adjusted for age and BMI were approximately 1.5 times higher in smokers than in people who never smoked (p ≤ 0.001)¹⁰. Vermeulen described 1.2 to 1.4 fold higher DHEA-S concentrations in smokers depending on age group¹¹. Not all studies concur, however. The results of a study of approximately 1,000 pre and postmenopausal women showed no evidence of a difference or trend.
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that supported higher DHEA-S concentrations in
women smokers.\textsuperscript{12} Ortego-Centeno reported that
young men smokers (n=15) had lower serum DHEA-S
concentrations than 17 nonsmokers (p \(\leq 0.05\)).\textsuperscript{13}

There are evidences that the serum concentrations
of DHEA-S are changed in patients with infectious
diseases. A study in adult men having syphilis pair-
matched with 30 normal men showed that serum
DHEA-S levels were significantly reduced in syphilitic
men compared with normal men, (p = 0.0018).\textsuperscript{14} There
was evidence that the median DHEA-S level was lower
in HIV-infected patients who were coinfected with
hepatitis virus C (HCV) compared with HIV-infected
patients who were not coinfected with HCV\textsuperscript{15}. For
hepatitis B virus (HBV) infection, there was no
previous study which studied the association
between HBV infection and serum DHEA or DHEA-S.

For HIV infection itself, no previous study about
association between duration of HIV infection and
serum DHEA-S level. Identification of recently infected
persons (generally within 6 months of infection) is
difficult and has traditionally relied on the prospective
testing and longitudinal follow-up of people at risk.
A number of methods have been proposed to detect
new cases of HIV infection. The methods included
HIV-1 p24 antigen test and HIV-1 RNA testing, which
has been used to identify recent HIV-1 infection.
However, those methods require testing for all HIV-1
seronegative specimens to identify the recent infec-
tions. In 2002, Parekh and colleagues described a new
assay, the BED-CEIA (HIV-1 subtypes B, E, and D,
IgG-Capture enzyme immunoassay), which was shown
to have similar sensitivity to multiple HIV-1 subtypes.
This laboratory technique can quantitatively measure
proportion of Anti-HIV IgG to total IgG in serum. It
uses the concept that the newly HIV-infected patients
will have low concentrations of Anti-HIV IgG but
the long-term HIV-infected patients will have higher
concentrations of Anti-HIV IgG. By this test, an
optimal normalized optical density (ODn = specimen-
OD/Calibrator-OD) cutoff of 0.8 and a seroconversion
period of 153 days offered the best combination of
sensitivity and specificity for distinguishing between
recent and long-term infections.\textsuperscript{16}

HIV-infected patients have decreased basal
adrenal androgen levels and impaired adrenal andro-
gen responses to adrenocorticotropic hormone (ACTH)
stimulation. DHEA has been shown in vitro to inhibit
HIV replication; therefore this raised the possibility
that the decreased DHEA levels observed in HIV-
infected patients might influence the effects of the
HIV infection.

Low serum concentrations of DHEA have been
correlated with states of decreased immune func-
tion in humans, since concentrations are lowest
in early childhood, late adulthood, and as HIV di-
sease progresses. DHEA appears to possess im-
munomodulating effects, perhaps by enhancing the
interleukin-2 (IL-2) from activated T cells as demon-
strated in a murine model. A decline in DHEA con-
centrations, particularly when initially less than 2.01
micrograms/L, might also proved to be a predictor
of HIV disease progression.\textsuperscript{2} Some of the HIV-
associated conditions, such as autonomic and endo-
crine dysfunction, may play a role in the balance of
the TH1 and TH2. For example, stimulated spleen
cells derived from sympathectomized animals se-
crete less IL-2 and IFN-gamma,\textsuperscript{17} characteristic of
a TH2 predominant response. In vivo and in vitro
data suggest that the adrenal hormone dehydro-
epiandrosterone and its sulfate (DHEA-S) may coun-
teract the effect of glucocorticoids and favor a TH1
response.\textsuperscript{18} Low serum levels of DHEA (evidence of
endocrine imbalance) have also been associated with
progression to AIDS. Mulder et al determined serum
DHEA levels in 41 asymptomatic HIV-1-seropositive
subjects, who progressed to AIDS within 5 years
after entering a cohort study, in 41 HIV-1-seropositive
controls, who remained asymptomatic, and in 41 HIV-1-
seronegative controls. They found that DHEA levels in
the progressors about 5 months before the diagnosis of AIDS were lower than the levels in the nonprogressors after the same follow-up. DHEA levels < 7 nanomoles/liter and CD4 lymphocytes < 500 cells/microliter both proved to be independent predictors for disease progression in HIV-1 infected men. Jacobson studied the relationship between serum DHEA and DHEA-S levels and subsequent progression to AIDS in a sample of HIV-infected men from the San Francisco Men’s Health Study followed prospectively. They observed an association of subnormal serum DHEA levels with increased risk of progression to AIDS only in patients with CD4 lymphocytes 200-499 cells/microliter (relative hazard = 2.34; 95% confidence interval = 1.18-4.63, \( p = .01 \)).

Since 1989, Thailand has established HIV surveillance among 60,000 the Royal Thai Army (RTA) military conscripts (mostly aged 21 years old) annually. It is believed to be the nationally representative sample of young Thai men. This ongoing total survey is helpful to be studied for the changes of risk behavioral pattern in this population. Moreover, since 2001, the RTA began recruiting volunteers aged 18-20 years old into the military service. The prevalence of HIV-1 infection among these younger men is a good proxy indicator of the HIV-1 incidence. Determining the true and reliable mean serum DHEA-S level by adjusting related factors (covariates) which can affect serum DHEA-S level is essential for fully understanding natural changes of this hormone in healthy young men and asymptomatic naive HIV-infected young men. These related factors are blood-borne infections and cigarette smoking.

Objectives

Primary Objective

To determine the serum DHEA-S levels in HIV-1 infected Thai military conscripts compare to HIV-1-seronegative Thai military conscripts.

Secondary Objective

To evaluate the associations between status of HCV infection, HBV infection, syphilis, recent HIV-1 infection, and cigarette smoking and the serum DHEA-S levels.

Design

This study was designed as a cross-sectional analytic study.

Methodology

1) Population

Target population:

Thai military conscripts (all are men) aged 18-30 years old.

Sample population:

Thai military conscripts aged 18-30 years old who were newly recruited into the RTA military service in round of induction in May 2006 were the sample population. The total numbers of them were 29,858 men. They were distributedly filled in all forts around the country on date 1st May 2006. All these young Thai men were physically examined and asked for their underlying disease(s) by physicians in the process of recruitment in April 2006 so healthy men were recruited into the RTA. All these new conscripts got HIV-counseling by well-trained military HIV-counselors in the first week after they came in the forts and informed consent for HIV testing were also obtained. About 1 week later, the new conscripts were blood drawn by the military medical personnel. Then the blood from all forts were sent to the Army Institute of Pathology (AIP) in Bangkok for HIV testing. The HIV testing results showed that 160 conscripts were HIV-1 infected. We used some data from project “Risk behavioral pattern of HIV-1 infection in Young Thai Men” which was conducted in this same population by permission from the principal investigator (Dr. Ram Rangsin). These data were age of conscripts, history of cigarette smoking and Anti HCV antibody results. This project can enroll 73 HIV-1 infected cases because the other 87 cases did not want to participate in the project. Then our project enrolled 72 HIV-1 infected cases from the project “Risk behavioral pattern of HIV-
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1 infection in Young Thai Men” (1 missing case due to lack of serum specimen). In HIV-1-seronegative arm, total HIV-1-seronegative cases were 29,698. Project “Risk behavioral pattern of HIV-1 infection in young Thai men” enrolled 1,111 cases by systematic sampling. Then our project enrolled 200 cases by systematic sampling.

2) Study procedure

We studied left-over serum samples of selected sample population. This study included 72 serum samples of HIV-1 infected conscripts and 199 serum samples of HIV-1-seronegative conscripts (1 missing case due to lack of serum specimen) as described above. The identification number was assigned to each serum sample by an officer who was responsible for data base of HIV-1 surveillance program in the RTA military conscripts at AFRIMS. The investigators can not link to the name of conscripts.

Laboratory evaluation

Anti HIV-1 antibody test with confirmation by Western Blot results from AIP laboratory were used in analyses.

We tested the selected left-over serum samples which were stored in -40°C freezer at AFRIMS for:
- serum DHEA-S levels using enzyme immunoassay (Immuno-Biological Laboratories, Inc.)
- IgG captured BED-EIA using Calypte® enzyme immunoassay to identify recent HIV-1 infection (within 153 days after seroconversion).16
- HBs antigen
- VDRL (RPR)

3) Data collection

All data were kept in data software. Data in hard copies were kept in locker responsible by the principal investigator. The left-over serums were transfered to laboratory with only identification numbers. No labeling of individual data was on the serum tubes (anonymous).

Statistical analyses

SPSS program version 11.5 for windows was used for data analyses. Chi-square or Fisher’s Exact Test was applied to compare differences in proportions for categorical variables. Student t-test was used to compare differences among continuous variables. P-values for all tests were two-sided, with a value <0.05 considered statistically significant.

Results

Demographic characteristics of HIV-1 infected and HIV-1-seronegative group are shown in table 1.

The mean (SD) age of HIV-1 infected group and HIV-1-seronegative group were 20.0 (5.8) and 18.8 (6.4) years, respectively. There was no statistically significant difference in age between groups. There was no statistically significant difference in cigarette smoking habits between groups.

Prevalence of HBV infection was higher in HIV-1 infected group (18.1%) than in HIV-1-seronegative group (6.5%) statistical significantly.

Prevalence of HCV infection in HIV-1 infected group was 6.9% whereas the prevalence in HIV-1-seronegative group was 7.0%. There was no significant difference between groups. Syphilis was detected in only 1 case in this study.

Serum DHEA-S levels in HIV-1 infected group and HIV-1-seronegative group are shown in figure 1.

The mean (SD) serum DHEA-S levels in HIV-1 infected group was 1.45 (0.84) mcg/ml and mean (SD) serum DHEA-S levels in HIV-1-seronegative group was 1.71 (1.17) mcg/mL. The median serum DHEA-S levels in HIV-1 infected group and HIV-1-seronegative group was 1.23 mcg/ml and 1.42 mcg/mL, respectively.

When we explored the outliers, we found that there were 10 cases who had serum DHEA-S levels above 4.0 mcg/mL. 8 of these 10 cases were current smokers (5 cases were regular current smokers, the left 3 cases were non-regular current smokers). The others were 1 past smoker and 1 non-smoker.

From histogram of serum DHEA-S levels data, the distribution of them was not normal. So we changed...
Table 1: Demographic characteristics of HIV-1 infected and HIV-1-seronegative group

<table>
<thead>
<tr>
<th>HIV-1 infected group (n=72)</th>
<th>HIV-1-seronegative group (n=199)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean age in yrs (SD)</td>
<td>20.0 (5.8)</td>
<td>18.8 (6.4)</td>
</tr>
<tr>
<td>Cigarette smoking&lt;sup&gt;a&lt;/sup&gt;</td>
<td></td>
<td></td>
</tr>
<tr>
<td>- current smoker</td>
<td>54 (76.1%)</td>
<td>127 (63.8%)</td>
</tr>
<tr>
<td>- past smoker</td>
<td>7 (9.9%)</td>
<td>24 (12.1%)</td>
</tr>
<tr>
<td>- never</td>
<td>9 (12.7%)</td>
<td>47 (23.6%)</td>
</tr>
<tr>
<td>- missing case(s)</td>
<td>2 (1.3%)</td>
<td>1 (0.5%)</td>
</tr>
<tr>
<td>HBV infection&lt;sup&gt;a&lt;/sup&gt;</td>
<td>13 (18.1%)</td>
<td>13 (6.5%)</td>
</tr>
<tr>
<td>HCV infection&lt;sup&gt;a&lt;/sup&gt;</td>
<td>5 (6.9%)</td>
<td>14 (7.0%)</td>
</tr>
<tr>
<td>Syphilis&lt;sup&gt;a&lt;/sup&gt;</td>
<td>1 (1.4%)</td>
<td>0</td>
</tr>
</tbody>
</table>

<sup>a</sup>represents to number of cases (%)

Figure 1: Box plot of serum DHEA-S levels in both groups
them into logarithm10. Then we tested difference between groups with independent 2 samples t-test. The results showed that the difference was statistically significant (p = 0.037).

The results of IgG captured BED-EIA showed that 15% of HIV-1 infected group (11 from 72 cases) were recently infected with HIV-1. The range of serum DHEA-S levels in this subgroup of recently infected cases was 0.43-4.27 mcg/mL.

Serum DHEA-S levels in each status are shown in table 2.

**Discussion**

The present research was a study of determining the serum DHEA-S levels in HIV-1 infected Thai military conscripts in comparison with HIV-1-seronegative infected Thai military conscripts.

This study was designed to control factors affecting on serum DHEA-S levels, i.e. age and cigarette smoking. The strong point of this study is sampling because the military conscripts came from all provinces around the country by lottery sampling. Then the archived serum samples were systematically sampling in this study.

This study explored the associations between status of HCV infection, HBV infection, syphilis infection, recent HIV-1 infection, and cigarette smoking and the serum DHEA-S levels in young Thai men.

Although the total number of HIV-infected cases in round May 2006 was 160, but the project “Risk behavioral pattern of HIV-1 infection in Young Thai Men” can enroll only 73 case. The other 87 cases who did not participate in the “Risk behavioral pattern of HIV-1 infection in Young Thai Men” project due to any reasons must be concerned.

From data in the study by Kandathil et al, median DHA-S level in the normal healthy individuals was 170 mcg/dL whereas mean DHEA-S level was 207 mcg/dL.

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>Median</th>
<th>Minimum</th>
<th>Maximum</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>non infect</td>
<td>199</td>
<td>1.42</td>
<td>0.28</td>
<td>10.7</td>
<td></td>
</tr>
<tr>
<td>infect</td>
<td>72</td>
<td>1.23</td>
<td>0.4</td>
<td>4.27</td>
<td></td>
</tr>
<tr>
<td>smoke</td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>current</td>
<td>181</td>
<td>1.38</td>
<td>0.38</td>
<td>10.7</td>
<td>0.247</td>
</tr>
<tr>
<td>past</td>
<td>31</td>
<td>1.24</td>
<td>0.4</td>
<td>4.4</td>
<td></td>
</tr>
<tr>
<td>never</td>
<td>56</td>
<td>1.52</td>
<td>0.28</td>
<td>4.04</td>
<td></td>
</tr>
<tr>
<td>HBV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>non infect</td>
<td>245</td>
<td>1.37</td>
<td>0.28</td>
<td>10.7</td>
<td>0.623</td>
</tr>
<tr>
<td>infect</td>
<td>26</td>
<td>1.48</td>
<td>0.4</td>
<td>4.18</td>
<td></td>
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<tr>
<td>HCV</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>non infect</td>
<td>252</td>
<td>1.40</td>
<td>0.28</td>
<td>10.7</td>
<td>0.254</td>
</tr>
<tr>
<td>infect</td>
<td>19</td>
<td>1.26</td>
<td>0.48</td>
<td>5.79</td>
<td></td>
</tr>
<tr>
<td>RPR</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>negative</td>
<td>270</td>
<td>1.38</td>
<td>0.28</td>
<td>10.7</td>
<td>-</td>
</tr>
<tr>
<td>positive</td>
<td>1</td>
<td>1.21</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
In our study, we found that mean difference was only 26 mcg/dL (171-145). The study by Kandathil et al was conducted in India where subtype C of HIV-1 is the predominant strain. Whereas in Thailand, the predominant subtype is subtype E.

To answer primary question, we did univariable analysis. We found that there was significant difference between serum DHEA-S levels in HIV-1 infected and HIV-1 seronegative groups. We concluded that serum DHEA-S level in HIV-1 infected Thai military conscripts was higher than serum DHEA-S level in HIV-1-seronegative Thai military conscripts statistical significantly.

For secondary research question, we did not find effect of HCV infection or HBV infection on serum DHEA-S levels. This may be caused by low number of HCV-infected cases and HBV-infected cases. Although no significant difference in serum DHEA-S levels between smokers and non-smokers was demonstrated in this study, but majority of cases who had serum DHEA-S level above 4.0 mcg/mL were current smokers.

**Limitation**

In the present study, we had no data of CD4 lymphocytes count because after the HIV-1 infected conscripts knew their serum HIV testing results, they would go to see physicians individually as they needed. Then they would be blood drawn for CD4 lymphocytes count.

**Conclusion**

In conclusion, the findings from the present study showed that there was evidence that serum DHEA-S levels in asymptomatic HIV-1 infected Thai military conscripts were lower than serum DHEA-S levels in HIV-1-seronegative Thai military conscripts statistically significant.

**Recommendations**

Further study should be done to follow-up HIV disease progression, CD4 lymphocytes count, serum DHEA-S levels, clinical status and survival of the HIV-infected conscripts with cooperation with the physicians who cared them.

### Table 3: Serum DHEA-S levels in related studies

<table>
<thead>
<tr>
<th>Population studied</th>
<th>Serum DHEA-S level</th>
<th>Reference</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 asymptomatic treatment-naive HIV-infected individuals</td>
<td>Mean(SD) = 83.5(52) mcg/dL, Median = 79 mcg/dL</td>
<td>Kandathil et al, 2005^{21}</td>
</tr>
<tr>
<td>30 normal healthy individuals</td>
<td>Mean(SD) = 207(123) mcg/dL, Median = 170 mcg/dL</td>
<td>Mauboussin et al, 2004^{15}</td>
</tr>
<tr>
<td>(24 men and 6 women; median age 35 years; range 22 to 58)</td>
<td>Median = 202.7 mcg/dL</td>
<td></td>
</tr>
<tr>
<td>137 HIV-infected patients (104 men and 33 women; median age 39.1 years for women and 41.8 years for men), not study in normal healthy individual</td>
<td>Median = 88-1,017 mcg/mL</td>
<td>Friedrich N et al, 2008^{22}</td>
</tr>
<tr>
<td>91 normal healthy German men, aged 20-24 years, not study in HIV-infected individuals</td>
<td>Median = 88-1,017 mcg/mL</td>
<td></td>
</tr>
</tbody>
</table>
Conflict of Interests
None declared.

Acknowledgements
This research was successfully accomplished under advice of Dr. Narin Hiranruthikul and Colonel Dr. Thippawan Chuenchitra who kindly served as the author’s academic advisors. Their meaningful advices and great support were deeply appreciated.

My appreciation also went to all the military conscripts and to Captain Sutchana Tabprasit and Mrs. Kamolwan Songprasom who did laboratory tests.

References
การศึกษาระดับของฮอร์โมน DHEA-S ในเลือดของพลทหารกองประจำการที่มีสุขภาพแข็งแรงเปรียบเทียบกับระดับของฮอร์โมนนี้ในพลทหารกองประจำการที่ติดเชื้อเอชไอวี-1

คุณากร คณา1, สุชชนา แทบประสิทธิ์1, กลววรรณ สองประสม1, ทิพยวรรณ ชื่นจิตร1 และ นรินทรหิรัญสุทธิกุล2

1สถาบันวิจัยวิทยาศาสตร์การแพทย์ทหาร, 2คณะแพทยศาสตร์ จุฬาลงกรณ์มหาวิทยาลัย

บทคัดย่อ: ในช่วงเวลาประมาณ 15 ปีที่ผ่านมา, นักวิจัยเริ่มพบว่าฮอร์โมนเพศชาย (androgen) ที่ถูกสร้างโดยต่อมหมวกไต มีบทบาทในการรับรู้การติดเชื้อเอชไอวี-1 ในCollider และไม่ติดเชื้อเอชไอวี-1. การศึกษาในระดับของ DHEA-S ในเลือดจะช่วยให้ทราบระดับของฮอร์โมนนี้ที่เชื่อถือได้. ผลการศึกษาจะนำไปสู่การศึกษาวิจัยในอนาคตที่อาจจะนำระดับของ DHEA-S ในเลือดมาใช้ในการพยากรณ์โรคเอดส์ต่อไป.

วัตถุประสงค์: เพื่อศึกษาถึงค่าเฉลี่ยของระดับ DHEA-S, ภาวะการติดเชื้อไวรัสตับอักเสบชนิดบีและซี, การติดเชื้อซิฟิลิสในเลือดของชายไทยที่ได้รับการคัดเลือกเข้าเป็นพลทหารกองประจำการ ผลัดพฤษภาคม 2549 จำแนกเป็นผู้ติดเชื้อเอชไอวีแต่ยังไม่แสดงอาการจำนวน 72 ราย และผู้ที่ไม่ติดเชื้อเอชไอวีจำนวน 199 ราย.

ผลการศึกษา: ค่าเฉลี่ยของระดับ DHEA-S ในเลือดของกลุ่มที่ติดเชื้อเอชไอวี-1 และกลุ่มที่ไม่ติดเชื้อเอชไอวี-1 พบว่ามีความแตกต่างกันอย่างมีนัยสำคัญทางสถิติ (p<0.037)

สรุป: ระดับ DHEA-S ในเลือดของพลทหารที่ติดเชื้อเอชไอวี-1 ต่ำกว่าในพลทหารที่ไม่ติดเชื้อเอชไอวี-1 อย่างมีนัยสำคัญทางสถิติ.

คำสำคัญ: ดีฮัยโดรอีพิแอนโดรสเตอโรนซัลเฟต, ตับอักเสบชนิดบี, การติดเชื้อซิฟิลิส