No Significant Difference between Lymphoproliferative Responses Measured in Acid Citrate Dextrose and Heparinized Blood from Healthy Thais

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Abstract

Background: Lymphocyte proliferation assays (LPA) is accepted technique for assessing cell-mediated immunity (CMI) in vitro. ACD blood is usually used for molecular assays but heparinized blood is used for LPA. Thus, it is more useful if ACD blood is collected and could be used for multipurposes.

Objectives: To determine whether using ACD and heparinized blood resulted in different lymphoproliferative responses.

Materials and Methods: ACD and heparinized blood from 35 healthy Thai blood donors were collected. Peripheral blood mononuclear cells (PBMC) separated by density gradient centrifugation was used to test and compare for lymphoproliferative responses to phytohemagglutinin (PHA), pokeweed mitogen (PWM), and tetanus toxoid. A stimulation index (SI) for each mitogen or antigen was calculated by dividing the count per minutes (cpm) in stimulated cultures by the cpm in control cultures. An SI > 3 was considered a positive response.

Results: All Thai blood donors (35/35) demonstrated positive proliferative responses to PHA and PWM by using both ACD and heparinized blood. The frequency of positive proliferative responses to tetanus toxoid using ACD and heparinized blood were 82.9% (29/35) and 88.6% (31/35), respectively. However, no significant differences in frequency of positive responses (chi-square test = 0.47, p=0.49) and SI values between ACD and heparinized blood were found (Wilcoxon signed ranks test, p > 0.1).

Conclusions: This results suggest no significant difference between using ACD and heparinized blood in LPA. Thus, ACD blood could be the anticoagulant of choice for LPA.

[Source: 33rd Phramongkutkloa Hospital Annual Scientific Meeting, Bangkok, Thailand, November 23-25 2005. (Poster)