Objective: To study and compare the tri-iodothyronine level in relation to gestational weeks in first trimester in normal population.

Method: Prospective observational study which included pregnant women during 1st trimester from January to March 2013. The primary outcome was a measure of tri-iodothyronine level in different week of gestation during 1st trimester of normal population with TPO-Ab negative.

Results: 129 patients were included in this study consisting of Malay 94 (72.9%), Chinese 10 (7.8%), Indian 12(9.3%) and others 13 (10.1%). From this study, the mean value of T3 level is 4.64 (SD 0.91) which conforms to the normal value of T3 in first trimester in pregnancy. 8 patients (6.27%) were tested TPO-Antibody positive which consists of 6 Malays (6%) and 2 Indians (16%). The mean level of T3 in TPO-Antibody positive is 4.24 (SD 0.48). The mean T3 level in normal pregnant women from 5 weeks gestation till 13 weeks gestation were 4.693 (SD 0.489), 4.674 (SD 0.750), 4.559 (SD 0.448), 4.080 (SD 0.704), 4.899 (SD 1.577), 4.863 (SD 0.976), 4.761 (SD 0.809), 4.538 (SD 0.843) and 4.872 (0.824). The mean value of T3 in relationship with TPO-Antibody positive and negative is 4.24 (SD 0.48) and 4.67 (SD 0.93) with p-value of 0.04.

Conclusion: The mean T3 level in TPO-Antibody positive conforms to the normal range but its value is significantly lower than the TPO-antibody negative. The mean level of T3 does not rise or fall with gestational age.