ABSTRACT

The Status of Vitamin D, Calcium, Phosphorus and Bone Density in The Pregnant and Non-Pregnant Women

Vitamin D deficiency is a widespread nutritional problem in recent times. Vitamin D plays a role in calcium and phosphorus absorption that determines the mineralization of bone. Consequently, deficiency of vitamin D may cause osteopenia and osteoporosis, which include pregnant women. The aim of this study was to analyze the difference of status of vitamin D, calcium, phosphorus and bone density in pregnant and non-pregnant women. This study was an analytical observational research with cross sectional design. The samples were 10 pregnant women in the third trimester and 10 non-pregnant women, ≥ 30 years old, who live in Puskesmas Bangkalan working area, who were divided randomly. Interviews, 24-h recalls and blood samples were collected. The concentration of serum vitamin D (25(OH)D) was measured by Gas Chromatography. The concentration of serum calcium and phosphorus were measured by Photometric Test. The bone density was measured by bone ultrasonometer. The data were analyzed by Mann Whitney test and t test. The results showed that there was no differences between groups regarding concentration of serum vitamin D (p=0.946) and phosphorus (p=0.088). However, there were significant differences between groups regarding serum calcium concentration (p=0.047) and bone density value (p=0.019). The conclusion is the mean of serum calcium concentration and the bone density value are lower in pregnant women than in non pregnant women.

Keywords: vitamin D, calcium, bone density, pregnant women