

## ABSTRACT

### THE INFLUENCE OF HEALTHY LIFE STYLE AND METFORMIN PACKAGE (PHS-M) ON VASPIN, FREE FATTY ACID, INSULIN RESISTANCE AND CARDIO METABOLIC RISK ON CENTRAL OBESITY-I WITHOUT DIABETES

**LIBRIANSYAH**

**Background :** Central obesity is the condition of fat accumulation associated with metabolic and cardiovascular disorders. The obesity related metabolic disorders such as Insulin Resistance (IR) to Diabetes Mellitus (DM), Cardiovascular event (Cardio Metabolic Risk/CMR), fatty liver and malignancy. These metabolic effects caused by adipose tissue activity to release many cytokines such as Visceral Adipose tissue-derived Serine Protease Inhibitor (VASPIN), Free Fatty Acid (FFA), inflammation cytokines, etc. Early detection and therapy must be done to minimize the effect of obesity related diseases. Healthy Life style and Metformin were indicated for DM with obesity. This study analyzed the influence of Healthy Life Style and Metformin Package (PHS-M) on VASPIN and FFA as cytokines produced by adipocytes and lipolysis process, IR and CMR as disorders mostly caused by obesity.

**Objective :** To analyze the influence of Healthy Life Style and Metformin Package (PHS-M) on VASPIN, Free Fatty Acid, Insulin Resistance (FPG, Fasting Insulin/FI, HOMA-R, QUICKI) and Cardio Metabolic Risk (BW, WC, LDL-C, HDL-C, TG and hs-CRP) on central obesity-I patients with out diabetes.

**Methods :** The research used quasi experimental, non equivalent pre test-post test controlled groups design on Banyuasin Region employers with central obesity-I without diabetes. This study was done in 12 weeks from October 2011 to February 2012. Eighty nine patients were divided into three groups, 30 patients in PHA-M Group, 29 patients in PHS Group and 30 patients in PHS-M Group. Statistical analysis used were Kolmogorov-Smirnov for normality test, pair t-test for before and after and simple ANOVA test for mean between three groups.  $\alpha$  of 0.05 were used to determine significant differences.

**Results :** PHS-M PACKAGE had significant influence on VASPIN level. PHS-M PACKAGE had significant influence on the decrease of FFA level. PHS-M PACKAGE had significant influence on Insulin Resistance's (IR) marker mainly on FPG, on level of  $FPG \geq 100 \text{mg/dl}$ , on  $HOMA-R \geq 4$  and  $QUICKI > 4$ . PHS-M PACKAGE had significant influence on cardioprotective effect through improvements of Cardio Metabolic Risk/CMR on central obesity-I without Diabetes.

**Conclusion :** PHS-M PACKAGE showed significant influence on decreasing VASPIN level, decreasing of FFA level, improving Insulin Resistance's marker and decreasing Cardio Metabolic Risk (CMR) on Central Obesity-I without Diabetes.

**Keywords :** PHS-M PACKAGE, Central Obesity-I, VASPIN, Free Fatty Acid (FFA), Insulin Resistance (IR), Cardio Metabolic Risk (CMR).