Effect of a polyphenolics extracts of Grape Seeds (GSE) on Blood Pressure(BP) in patients with the Metabolic Syndrome (MetS)  
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Abstract- #211.1
Effect of a polyphenolics extracts of Grape Seeds (GSE) on Blood Pressure (BP) in patients with the Metabolic Polyphenolic compounds in grape seeds are potent antioxidants which cause a NO mediated endothelium dependent relaxation of blood vessels. The present study was undertaken to determine whether a GSE lowers BP in subjects with the MetS. The GSEs was manufactured by Polyphenolics Inc. (Madera, CA) contains ~95% phenolic compounds and is low gallocate units. 24 subjects with MetS (NCEP III) were randomized into 3 groups (n=8) and given either a placebo, 150 mg/day or 300 mg/day of the extract. A 12 hour ambulatory BP recording was made at the start of the study and after 4 weeks of treatment. Serum lipids, blood glucose, plasma insulin and oxidized LDL were measured at the start and end of the study. Oxidized LDL was measured using an ELISA (Mercodia Inc, Uppsala, Sweden). After 4 weeks subjects receiving both 150 mg and 300 mg of GSEs significantly lowered their BP while those on placebo showed no significant change (p<0.05). The fasting blood glucose, plasma insulin, serum lipids and plasma oxidized LDL concentrations were unchanged. Insulin resistance as determined by the homeostasis model was elevated in all 3 groups but did not change with treatments.

Methodology

Subject selection: The study was approved by IRB, University of California, Davis. After an initial screening session 24 subjects with metabolic syndrome were identified using the NCEPIII guidelines. They were randomized into 3 groups (n=8) and given either a placebo, 150 mg/day or 300 mg/day of the extract. A 12 hour ambulatory BP recording was made at the start of the study and after 4 weeks of treatment. Serum lipids, blood glucose, plasma insulin and oxidized LDL were measured at the start and end of the study. Oxidized LDL was measured using an ELISA (Mercodia Inc, Uppsala, Sweden) (4).

Blood pressure monitoring: A 12 hour ambulatory BP recording was made at the start of the study and after 4 weeks of treatment using Sein blood pressure monitor (SE-25S, Korea).

Blood measurements: Serum lipids, blood glucose, plasma insulin and oxidized LDL were measured at the start and end of the study. oxidized LDL was measured using an ELISA (Mercodia Inc, Uppsala, Sweden) (4).

Results

Oxidized LDL: Oxidized LDL concentration was significantly reduced In the group treated with 300 mg of the extract, there was reduction oxidized LDL. The reduction was correlated with the baseline values as shown below. (R = 0.8, P=0.003 ).

Summary and Conclusions

These findings show that the grape seed extract administered orally reduced both systolic and diastolic pressures in patients with the metabolic syndrome. It appears that both doses (150 mg/day and 300 mg/day) are equally effective in lowering blood pressure.

It is suggested that the extract could be useful in the management of patients with the metabolic syndrome, especially when the blood pressure is in the pre-hypertensive category.

Acknowledgement

Study supported by a grant from Polyphenolics Inc., Madera CA, USA.

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Plasma oxidized low density lipoprotein (OxLDL) was measured using an ELISA (Mercodia Inc, Uppsala, Sweden) (4).

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