Thesis Title	THE ANTITHROMBOTIC MECHANISM OF FRUCTOSE-1,6-DIPHOSPHATE ON PLATELET AGGREGATION, FIBRINOLYTIC ACTIVITY, PLATELET SEROTONIN AND PLASMA PROSTACYCLIN
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ABSTRACT

Fructose-1,6-diphosphate (FDP) was considered to be an effective agent for the relief of ischemia and vascular insufficiency. It is worthwhile to comfirm this effect of FDP on platelet aggregation, fibrinolytic activity, platelet serotonin and plasma prostacyclin.

This study was designed as a placebo-controlled, single-blind, crossover trial. There were 22 normal subjects : 12 males, 10 females with the age range of 21-40 years (mean = 31± 6 years). A single FDP 150 mg/kg body weight dose was intravenously infused within 10 min. All the above parameters were assessed in all subjects before, at 1/2 h and 6 h after the start of FDP. An equal volume of 10% glucose was used as the placebo in the same subjects by the similar manner.

The results are as follows :

1. FDP significantly inhibited platelet aggregation induced by 25μM adrenaline and ADP at 1/2 h after infusion and it was found to return to the control values at 6 h after FDP.

2. FDP has more inhibitory effect than glucose on platelet aggregation induced by collagen and ADP with a statistically significant difference at 1/2 h and by ADP at 6 h after infusion.

3. FDP significantly increased both fibrinolytic activity and platelet serotonin content at 1/2 and 6 h after administration. It also had more potent effect than glucose at both time points.

4. FDP slightly increased plasma 6-keto-$PGF_{1\alpha}$ both at 1/2 and 6 h after infusion, whereas glucose slightly decreased plasma 6-keto-$PGF_{1\alpha}$ at 1/2 h and 6-keto-$PGF_{1\alpha}$ levels returned to the control value at 6 h after infusion. However, these 6-keto-$PGF_{1\alpha}$ levels were not significantly different from each other and from the control values.

5. No significant changes in blood pressure, pulse rate, temperature were observed in all subjects during and up to 1 month after FDP infusion. In addition, no FDP-induced adverse effects were seen during the same period.

These considerable results indicated that FDP might be advantageous in relieving vascular occlusion or tissue ischemia in emergency patients. However, more clinical trials of FDP are needed to confirm our results.