

The Influence of an Acute Dose of Aspirin on Cold-Induced Vasodilation: 1505: Board #52 May 28 2:00 PM - 3:30 PM

[B-24 Free Communication/Poster - Cold Stress: Responses and Interventions: MAY 28, 2008 1:00 PM - 6:00 PM ROOM: Hall B]

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(No relationships reported)

When the fingers are exposed to the cold there is a cyclic response between vasoconstriction and cold-induced vasodilation (CIVD) which serves to decrease and increase finger skin temperature (T_{SK}). The exact mechanisms responsible for CIVD are not completely understood but the release of vasodilatory substances may contribute to CIVD. Aspirin (ASP) may decrease the release of nitric oxide and prostaglandins.

PURPOSE: To examine the effects of an acute dose of ASP on the CIVD response during submersion of the hand in cold water.

METHODS: Six subjects (5 males, 1 female; mean age: 23.0 ± 3.3 yrs) performed two experimental trials for the assessment of CIVD. During one experimental trial, subjects ingested 650 mg of ASP dissolved in 125 mL of orange juice 30 minutes prior to the trial. During the other experimental trial, subjects ingested a placebo (PL) (125 mL of orange juice). The order of the experimental trials was counter-balanced and a double-blind placebo controlled design was utilized. Each experimental trial consisted of a 30 minute baseline period (27°C air), 40 minute cold exposure (hand submersed in 5°C water), and a 15 minute recovery period (27°C air). T_{SK} of the second and third fingers was measured continuously using thermocouples. The following variables were used to assess the CIVD response during the cold exposure: onset time (time from onset of cold exposure to increase in finger T_{SK}), T_{MIN} (minimum finger T_{SK}), T_{MAX} (maximum finger T_{SK}), peak time (time from onset of cold exposure to T_{MAX}), T_{MEAN} (average finger T_{SK} from onset time to end of cold exposure), and amplitude ($T_{MAX} - T_{MEAN}$).

RESULTS: There were no differences between PL and ASP for onset time (PL = 710 ± 440 , ASP = 728 ± 422 sec), T_{MIN} (PL = 5.29 ± 0.52 , ASP = $5.39 \pm 0.37^{\circ}\text{C}$), T_{MAX} (PL = 6.36 ± 1.13 , ASP = $6.22 \pm 0.88^{\circ}\text{C}$), peak time (PL = 1222 ± 579 , ASP = 1350 ± 468 sec), T_{MEAN} (PL = 5.79 ± 0.64 , ASP = $5.80 \pm 0.61^{\circ}\text{C}$), and amplitude (PL = 0.57 ± 0.61 , ASP = $0.42 \pm 0.31^{\circ}\text{C}$) (all $P > 0.05$).

CONCLUSIONS: The ingestion of 650 mg of ASP had no effect on the finger T_{SK} when the hand is submersed in 5°C cold water. These results indicate that 650 mg of ASP may not have been sufficient to inhibit the release of vasodilatory substances or, if ASP was effective in inhibiting the release of vasodilatory substances, these substances may not be involved in CIVD.