



POSTER NO 1

The Effect of Honey on Prostaglandin Levels in the Body

Al-Waili, Noori S, M.D, PhD; and BONI, NADER S, M.Sc; "Natural Honey Lowers Plasma Prostaglandin Concentrations in Normal Individuals", **Journal of Medicinal Food**, 2003 Summer; 6 (2): 129-33

ABSTRACT

Twelve normal, healthy adult individuals, 9 men and 3 women, 25–48 years of age (mean, 38 years), were recruited in the study. After 12 hours of fasting, blood specimens were collected at 8:00 AM for prostaglandin E2 (PGE2), PGF2a, and thromboxane B2 assays. Each individual then drank 250 ml of water containing 1.2 g/kg body weight of natural unprocessed honey, after which collection of blood was repeated at 1, 2, and 3 hours for estimation of prostaglandins. Each individual was asked to drink the same amount of honey diluted in water once a day for a maximum of 15 days. After 12 hours of fasting, morning blood specimens were collected on day 16, and plasma prostaglandin concentrations were measured. The quantitative analysis of prostaglandins was performed with use of an enzyme-linked immunosorbent (ELISA) test. Results showed that the mean plasma concentration of thromboxane B2 was reduced by 7%, 34%, and 35%, and that of PGE2 by 14%, 10%, and 19%, at 1, 2, and 3 hours, respectively, after honey ingestion. The level of PGF2a was decreased by 31% at 2 hours and 14% at 3 hours after honey ingestion. At day 15, plasma concentrations of thromboxane B2, PGE2, and PGF2a were decreased by 48%, 63%, and 50%, respectively. It may be concluded that honey can lower the concentrations of prostaglandins in plasma of normal individuals.

COMMENT

Prostaglandins, in the human system, are potent "mediators" of a variety of strong physiological effects. They are technically hormones, although they are rarely classified as such. The prostaglandins together with the thromboxanes form a class of fatty acid derivatives.

There are nine known prostaglandin receptors on various cell types in the body. These varied receptors mean that prostaglandins act on a variety of cells, and have a wide variety of actions. Prostaglandins:

- **cause constriction or dilatation in vascular smooth muscle cells**
- **cause aggregation or dis-aggregation of platelets**
- **sensitize spinal neurons to pain**
- **constrict smooth muscle**
- **regulate inflammatory mediation**
- **regulate calcium movement**
- **regulate hormone regulation**
- **control cell growth**

In general, prostaglandins are thought of as mediators of inflammation in the body. Both prostaglandins and thromboxanes have been implicated in immune suppression and atherosclerosis.

This small and limited study demonstrates that honey may lower prostaglandin levels in normal individuals. To the degree that honey lowers prostaglandin levels, it may be considered to have an anti-inflammatory effect in the body.

Additional References:

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3. Robertson Pr, Chein Mei, "Role of Prostaglandin E in Defective Insulin Secretion and Carbohydrate Intolerance in Diabetes Mellitus". **Journal of Clinical Investigation** 1977 60(3): 747-753