Research in Pharmaceutical Sciences, 2012;7(5)
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The effects of honey on the inflammatory parameters in the rat air pouch model of inflammation

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Background and Aims: The aim of present study was to investigate the effects of honey on the inflammatory parameters in rat air pouch model of inflammation.
Methods: Male Wistar rats were anesthetized; 20 ml and 10 ml of sterile air were injected subcutaneously on the back on day 0 and day 3, respectively. On day 6, inflammation was induced by injection of 1 ml of carrageenan 1% (W/V) into pouches. One ml of honey (0.25, 0.5 & 1%) was administered intra pouch at the same time as the carrageenan and then for 2 consecutive days. The control rats received the same amount of saline solution. After 72h, the rats were sacrificed. The pouches were flushed with 3 ml of PBS and vigorously massaged for 30 seconds. Then they were opened with a small incision and pouches fluid was collected in order to determine exudates volume and cells were counted using cell counter. The granulation tissues formed were dissected out and the weight determined.
Results: Leukocyte accumulation was significantly inhibited ($P<0.001$, $P<0.01$ & $P<0.05$) by honey with doses of 0.25, 0.5 & 1%, respectively. In addition, honey (0.5 & 1%) significantly reduced the volume of exudates versus the control values ($P<0.01$ & $P<0.05$, respectively). The granulation tissue weight was significantly ($P<0.05$) less than those in control group with 0.25, 0.5 and 1% of honey.
Conclusions: Regarding the results, it may be concluded that natural honey possesses a potent anti-inflammatory property. Therefore, honey may be used to treat certain chronic inflammatory conditions.

Keywords: Honey; Rat; Air pouch; Anti-inflammatory