Study of the Microbial Contamination Rate of Traditional Ice Cream Products in Tehran, March 2008- March 2011

Abstract

**Background:** Because of the high probability of microbial contamination of the traditional ice creams, this study designed to determine the microbial contamination of traditional ice cream products sold in Tehran from March 2008 to March 2011.

**Methods:** In this cross-sectional, descriptive study, the ice cream samples were collected randomly from different vendors in Tehran and were examined for their total mesophilic aerobic bacteria, *Enterobacteriaceae*, *Escherichia coli*, *Staphylococcus aureus* and mold using the specific national standards for any organism. The chi-square test, at significance level of P<0.05, was used to compare the level of contamination between different time periods.

**Results:** Ninety four percent of the samples did not meet the national microbiological standards for ice creams. Total mesophilic aerobic bacteria, *Enterobacteriaceae*, *Escherichia coli* and *Staphylococcus aureus* contamination was detected in 88.1%, 100%, 73%, 23.6% and 4% of the samples, respectively. There was a significant difference between *Staphylococcus aureus* contamination of the ice creams in the Spring-Summer periods of 2008 to 2011. No other significant difference and no improvement in the microbial contamination of the ice creams during the study period were shown between different time periods in this study.

**Conclusion:** The high microbial load of the traditional ice creams confirms unhygienic conditions in their process of production and sale. Implementation of hygienic practices and regular control on these processes is recommended to minimize the risk of contamination.

**Keywords:** Traditional ice cream, microbial contamination, microbial quality