Title: Is calprotectin a marker of tobacco smoke related inflammation? A pilot study in children

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Body: Objectives: Environmental tobacco smoke (ETS) related inflammation has an anorexigenic effect through affecting the release of appetite-modulating mediators, leptin and ghrelin. Elevated serum calprotectin levels are found in a variety of inflammatory conditions. We studied the relation between ETS and body mass index (BMI), as well as serum levels of leptin, ghrelin and calprotectin. Material and Methods: A cross-sectional study was performed by searching the smoking status of parents. After filling in the questionnaires, parents were phoned and children were invited to supply fasting blood samples in order to measure serum levels of leptin, ghrelin and calprotectin, and to calculate their BMIs. Participant children were divided into Group 1, those who are exposed to and Group 2, not-exposed to indoor ETS. Results: There were no statistical difference between BMI and serum levels of leptin, ghrelin and calprotectin in two groups (p values are 0.85, 0.87 and 0.42 respectively), but serum calprotectin levels were statistically higher in Group 1 (p=0.003). Conclusions: In this study serum levels of calprotectin were found to be higher in children with indoor ETS exposure where no relation was detected with BMI and serum levels of leptin and ghrelin. Increased serum levels of calprotectin might be an indicator of inflammation related to ETS exposure.