ABSTRACT: To perform a systematic review and meta-analysis on cytokine levels in patients with fibromyalgia syndrome (FMS). Through December 2010 we systematically reviewed the databases PubMed, MEDLINE, and PsycINFO and screened the reference lists of 22 review articles for suitable original articles. Original articles investigating cytokines in patients with FMS were included. Data were extracted by two independent authors. Differences of the cytokine levels of FMS patients and controls were summarized by standardized mean differences (SMD) using a random effects model. Study quality was assessed applying methodological scores: modified Center of Evidence Based Medicine, Newcastle-Ottawa-Scale, and Würzburg Methodological Quality Score. Twenty-five articles were included investigating 1255 FMS patients and 800 healthy controls. Data of 13/25 studies entered meta-analysis. The overall methodological quality of studies was low. The results of the majority of studies were not comparable because methods, investigated material, and investigated target cytokines differed. Systematic review of the selected 25 articles revealed that FMS patients had higher serum levels of interleukin (IL)-1 receptor antagonist, IL-6, and IL-8, and higher plasma levels of IL-8. Meta-analysis of eligible studies showed that FMS patients had higher plasma IL-6 levels compared to controls (SMD = -0.34 [-0.64, -0.03] 95% CI; p = 0.03). The majority of investigated cytokines were not
different between patients and controls. The pathophysiological role of cytokines in FMS is still unclear. Studies of higher quality and with higher numbers of subjects are needed.