Diagnostic accuracy of serum miR-122 and miR-199a in women with endometriosis

Abstract

Objective: To evaluate the value of serum microRNA-122 (miR-122) and miR-199a as reliable noninvasive biomarkers in the diagnosis of endometriosis.

Methods: During 2015–2016, at a teaching hospital in Egypt, prospective cohort study was conducted on 45 women with pelvic endometriosis and 35 women who underwent laparoscopy for pelvic pain but were not diagnosed with endometriosis. Blood and peritoneal fluid (PF) samples were collected; interleukin-6 (IL-6) was detected by enzyme-linked immunosorbent assay and miR-122 and miR-199a expression was measured by quantitative real-time polymerase chain reaction.

Results: The serum and PF levels of IL-6, miR-122, and miR-199a were significantly higher in women with endometriosis than in controls ($P<0.001$ for all comparisons). Serum miR-122 expression was positively correlated with serum IL-6 ($r=0.597$), PF IL-6 ($r=0.603$), PF miR-122 ($r=0.934$), serum miR-199a ($r=0.727$), and PF miR-199a ($r=0.653$). Serum miR-199a expression was positively correlated with serum IL-6 ($r=0.677$), PF IL-6 ($r=0.678$), PF miR-122 ($r=0.744$), and PF miR-199a ($r=0.932$). Serum miR-122 and miR-199a had a sensitivity of 95.6% and 100.0% and a specificity of 91.4% and 100%, respectively, for the detection of endometriosis.

Conclusion: Serum miR-122 and miR-199a were significantly increased in endometriosis, indicating that these microRNAs might serve as biomarkers for the diagnosis of endometriosis.