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Page: 39-51

Immunomodulatory effects of blood letting cupping therapy in patients with rheumatoid arthritis

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This study was carried out in order to evaluate the efficiency of blood-letting cupping (BLC) therapy as a complementary therapy in management of rheumatoid arthritis (RA) and to investigate its modulatory effects on natural killer cells (NK) and soluble interleukin-2 receptor (SIL-2R). Two groups of RA patients diagnosed according to American Rheumatology Association were included: Group I included 20 patients who received the conventional medicinal therapy of RA, Group II included 30 patients who received combined conventional and BLC therapy. Ten age and sex matched normal controls were also included, as group III. Visual analogue score (VAS), tender joint count (TJC), swollen joint count (SJC), disease activity scores (DAS), laboratory markers of disease activity [erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), Rheumatoid factor (RF)] were evaluated on 3 successive months, NK cell (%) measured by flowcytometry and SIL-2R concentrations measured by ELISA were also assessed. After one month of combined therapy there was significant (P < 0.001) reduction in VAS (5.16 +/- 0.28), TJC (11.62 +/- 1.03), SJC (10.13 +/- 1.02) and DAS (5.35 +/- 0.14). Early and marked reductions in laboratory markers of disease activity (26.90 +/- 3.68) for CRP, (51.46 +/- 6.06) for RF and (40.56 +/-3.36) for ESR were also detected as compared to base line, while the effects of conventional therapy appeared late after 3 months of treatment. Conventional therapy induced significant depression in white blood cell (WBC %) (p < 0.001) whereas combined therapy induced marked (p < 0.001) elevation since the first month (8.44 +/- 1.58) compared to base line (6.94 +/- 1.58). There was a significant (P < 0.05) lowering in NK cell (%) with conventional therapy while combined therapy induced significant (P < 0.001) increase (11.33 +/- 0.4.7) compared to base line level (8.50 +/- 0.46). Additionally, combined therapy resulted in marked reduction (P < 0.001) in SIL-2R conc. after 3 months of treatment (1790 +/- 68.11) compared to base line (2023 +/- 92.95), while insignificant reduction was detected with the conventional therapy. The improvement rate (%) of clinical, laboratory cellular & immunological parameters were significantly higher with combined therapy than with conventional therapy. Moreover, strong positive correlations (p < 0.0001) were detected between SIL-R conc. and clinical parameters VAS (r = 0.890), TJC (r = 0.905), SJC (r = 0.872) and DAS (r = 0.923) and also between SIL-R conc. and ESR (r = 0.973), CRP (r = 0.933), RF (r = 0.941), while a strong negative correlation was found with NK count cell % (r = 0.927). In conclusion, BLC therapy combined with conventional therapy may improve the clinical condition of patients with RA. It has modulatory effects on the innate (NK %) and adaptive cellular (SIL-2R conc.) immune responses that could be used as monitoring tools for disease activity and prognosis.