as to autoimmune diseases that are accompanied by chronic inflammation. Regarding the balance between Th1 and Th2 one important cytokine is IL-6. Tumour necrosis factor alpha (TNFα) and interferon gamma (IFNy) were originally found to be produced by inflammatory cells and play important roles in the immune system.

Methods and patients: To specify the results, we used a patient subgroup of the pilot phase of the SerMa study (EUBREAST 5) for further analyses. In this population of breast cancer patients who underwent simple mastectomy we analyzed the cytokine content of collected seroma fluids (Sf) and compared the results with those measured in serum of the same patients (Sp) and in serum of ealthy controls (Sc). Cytokines were evaluated by the Bio-Plex platform (BioRad). A Bio-Plex Pro human Cytokine Screening Panel was used to determine the cytokine concentrations. Statistical analysis was performed using GraphPad Prism. Results were analyzed by either a one-way ANOVA or Kruskal–Wallis-test. Correlation analysis was also performed by the software. A value of $p < 0.05$ was considered statistically significant.

Results: Significant higher levels of IFNy, IL-2, TNFα, IL-4, IL-6 and IL17 were found in the Sf-group compared to Sp and Sc groups. In detail, cytokines responsible for Th1 differentiation were IFNγ, IL-2, and TNFα. For the Th2 differentiation Il-4 and IL-6 showed significant higher levels, and in case of Th17 it was primarily IL-17.

Conclusion: These results demonstrate an interesting concordance between cytokine expression and T-cell differentiation in the Sf group which needs to be further investigated in a larger patient cohort planned within the SerMa study.

No conflict of interest.

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Cytokine identification in seroma fluid after mastectomy in breast cancer patients – first results of SerMa pilot study subgroup

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Introduction: Postoperative seroma formation is one of the most common and serious complications after breast cancer surgery. It frequently appears after simple or radical mastectomies. Data from our recently published pilot study on immunological processes in seroma formation, showed a specific immune response of CD3+/CD4+ T helper (Th) cells. A significant increase of Th2 and Th17 was observed in both, seroma fluid and peripheral blood of the same patients while no increase was found in healthy controls. Interleukin (IL)-17 contributes to various lesions that are produced by Th17 cells as well