Anhang:

Abstract zum Poster:

Systemic shortage after leucocyte migration into surgical trauma areas is an important factor for increased mortality in a murine sepsis model

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Background / Purpose

Surgery leads to immune dysfunction lasting several days associated with increased mortality in sepsis. A model of postoperative immune dysfunction combined with a sepsis model was performed to study immune cells in postoperative sepsis.

Methods

We used female C57BL/6N mice for Surgically-induced Immune Dysfunction (SID): The small intestine (SI) was pressed out in antegrad direction between Q-tips three times consecutively. Control animals underwent laparotomy. 3 days later Colon Ascendens Stent Peritonitis (CASP) was performed. We studied mortality for 30 days and isolated cells from spleen, peritoneal lavage (PL) and SI 24 hours after CASP. F4/80+ macrophages (MP) were counted in flow cytometry. Statistical analysis occurred in GraphPad Prism 6.

Results

Mortality of sepsis was higher following surgery compared to laparotomy. Body temperature 12 hours after CASP correlated with survival and was significantly lower in SID group. 24 hours after CASP mice had increased counts of intestinal MP but less in spleen and PL compared to control. Similar effects were shown on other leukocytes. Cell count in spleen and PL correlated positively, in SI negatively with body temperature.

Conclusions

Leukocyte migration into trauma areas leads to systemic shortage in the postoperative period. These findings correlate with increased mortality in murine CASP model and indicate the local leukocyte accumulation as a major reason for increased severity of sepsis following surgery.