EuroSciCon

EuroSciCon Conference on

Virology and Infectious Diseases

April 22-23, 2019
Athens, Greece

L Kovacs et al., Arch Clin Microbiol 2019, Volume:10
DOI: 10.4172/1989-8436-C1-017

TNFα AND PERITONITIS

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Background: In 1891, William B Coley injected streptococcal organisms into a patient with inoperable cancer. He thought that the infection he had produced would have the side effect of shrinking the malignant tumor.

Hypothesis: Surgical infection may improve host response

Methods: 55 patients with radical cystectomy and lymphadenectomy were studied. Blood samples were taken on day 0, 1, 3, 6, 9 and 14 after surgery, and a 5-year follow-up was carried out. TNF alpha, soluble TNF alpha receptor I and IL-6 levels in sera were determined by HS ELISA and/or ELISA kits. Plasma cortisol values were measured by RIA kits.

Results: Out of 55 patients, 23 surgical site infections, 7 metastatic death and 5 early postoperative abdominal paralysis were found. The small intestine suture leakage caused circumscript peritonitis first, then, due to the antiparalysis treatment, diffuse peritonitis. One patient's cytokine production was closer to the group of those who died from metastatis than to the group of abdominal paralysis. That is why this research finally involved only 4 patients. Two patients died from sepsis. One patient is still alive. The last patient survived abdominal paralysis but died from stroke two years after cystectomia. On day 0, the average circulating TNFα values were six times higher in the survivors. TNFα decreased on day 1 in 'the survivors' serum and started to increase from day 3 to day 9. The increase was observable in non-survivors too, but much less. The non-survivors' serum TNFα values were higher on day 1 than on day 0. In vitro, eleven times more TNFα was released in the survivors' stimulated lymphomonocytes than in the cells without LPS.

Conclusion: The postoperative infection is a double-edged sword and can result in severe sepsis and/or can elevate immune response improving the outcome from the operation and/or from tumor disease.

Biography

Lukács Kovács attended the Calvinist High School in Tata, Hungary. Now he is a fourth-year student at Semmelweis University Budapest, Faculty of Medicine. Professor Mózes invited him to take part in the research of cystectomy in August 2017. Initially, he managed the database then he transported the blood samples to the laboratory and separated the serum. He helped arranging the samples and measuring TNF alpha, IL-6 and PGE2 levels by HS ELISA and/or ELISA kits. Nowadays he is doing statistical data analysis by SPSS programme.

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