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Meeting abstract

Predictive value of IL-6 and IL-10 serum levels in anastomotic leakage in elderly patients undergoing surgery for colorectal cancer

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Background

Elderly patients undergo surgery for colorectal cancer more often than younger patients because of the incidence and prevalence of colon and rectal cancer (CRC).

Anastomotic leakage is the most feared complication after surgery because it impairs postoperative survival, disease free survival rate and recurrence.

A recent meta-analysis shows that interleukin IL-6 and IL-10 intraperitoneal levels may be a useful marker to predict the likelihood to anastomotic leakage. Furthermore, the variations of cytokines levels are similar both in serum and intraperitoneal fluid, despite there is a quantitative difference between peritoneal and systemic concentrations.

For this reason in our Department a prospective study is ongoing to assess if systemic interleukin IL-6 and Il-10 are a reliable marker to predict anastomotic leakage.

Methods

The study group is yet represented by 33 patients: 17 males and 16 females (median age 76, range 70–89). The location of cancer was respectively: 5 (15, 15%) in the rectum, 15 (45, 45%) in the left colon, 11 (33, 33%) in the right colon, 1 (3, 3%) in the transverse colon, 1 (3, 3%) synchronous in the caecum and the sigmoid colon.

The associated diseases observed were: chronic obstructive pulmonary disease, hypertension, diabetes mellitus, ischemic heart disease arterial vasculopathy.

The surgical operations performed were respectively: 11 left colectomies, 8 right colectomies, 2 subtotal colectomies, 6 segmental resections, 3 anterior resections, 1 bypass anastomosis, 2 abdominoperineal excisions. In our study group we made 31 digestive anastomoses.

Systemic measurements of IL-6, IL-10, C-reactive protein (CRP), lymphocytes and serum albumin were performed with ELISA in the preoperative period (t0), in the first (t1) and seventh postoperative day (t2).

Results

In the study group 32 anastomoses were made and we observed only one (3.2%) anastomotic leakage. The CRP serum levels (mg/l) were: t0 24.63 ± 4.17, t1 25.62 ± 5.63, t2 21.5 ± 4.41 in complicated patients and t0 24.64 ± 5.18, t1 24.4 ± 7.15, t2 22.4 ± 7.99 in uncomplicated ones. IL-6 serum levels (pg/ml) were: t0 8.13 ± 3.31, t1 145.87 ± 88.62, t2 19.75 ± 23.56 in complicated patients and t0 6.74 ± 4.9, t1 118.36 ± 57.64, t2 19.32 ± 15.08 in uncomplicated ones. IL-10 serum levels (pg/ml) were: t0 4.63 ± 2.13, t1 19.52 ± 8.38, t2 5.75 ± 4.23 in complicated patients and t0 16.92 ± 18.10, t1 20.28 ± 18.18, t2 5.2 ± 2.61 in uncomplicated ones. Albumin serum levels (g/dl) were: t0 3.68 ± 0.42, t1 2.34 ± 0.70, t2 2.85 ± 0.83 in complicated patients and t0 3.71 ± 0.60, t1 2.82 ± 0.54, t2 3.30

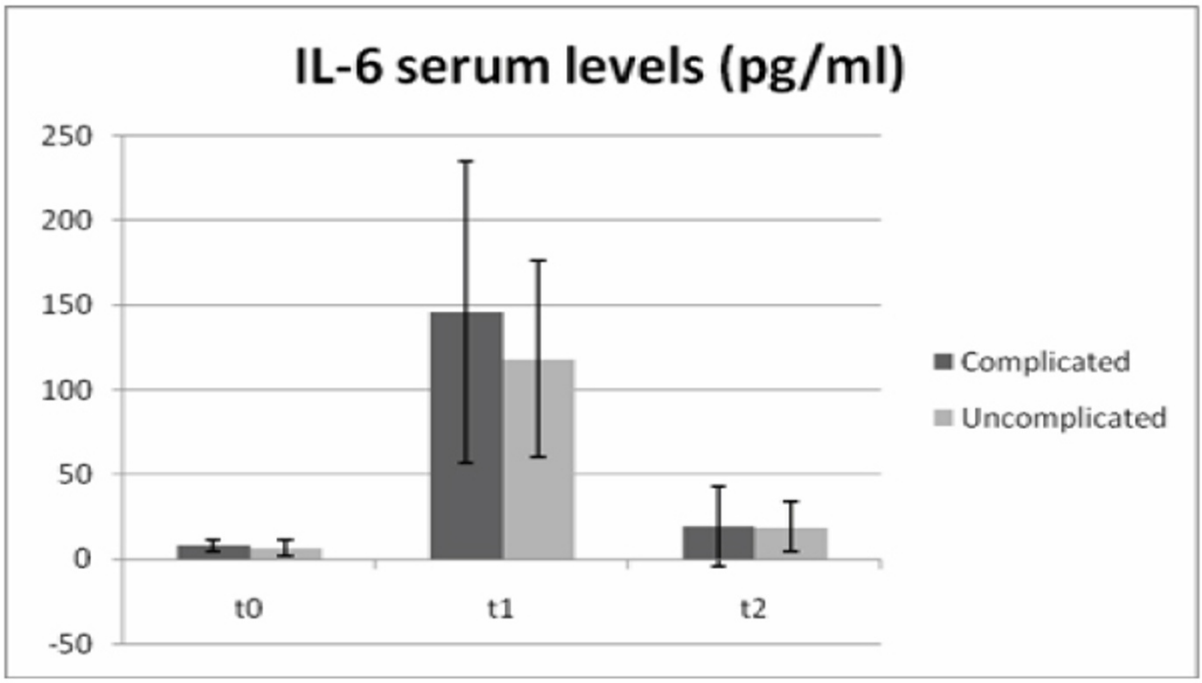

Figure 1

± 0.53 in uncomplicated ones. Lymphocytes (n°/μl) were. T0 2315.7 ± 854.5, t1 864.28 ± 404.18, t2 1502.85 ± 441.57 in complicated patients and t0 1580 ± 684.79, t1 920 ± 407.55, t2 1312.30 ± 415.15 in uncomplicated ones. These values and their variations are showed in Figures 1, 2, 3, 4, 5.

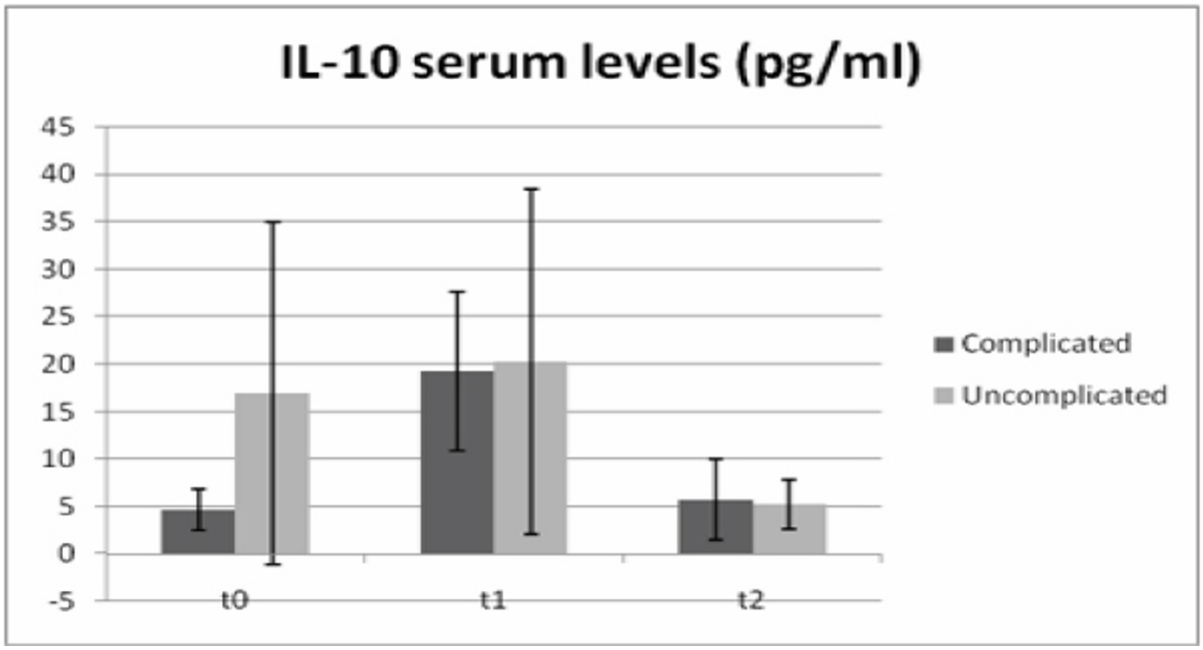

Figure 2

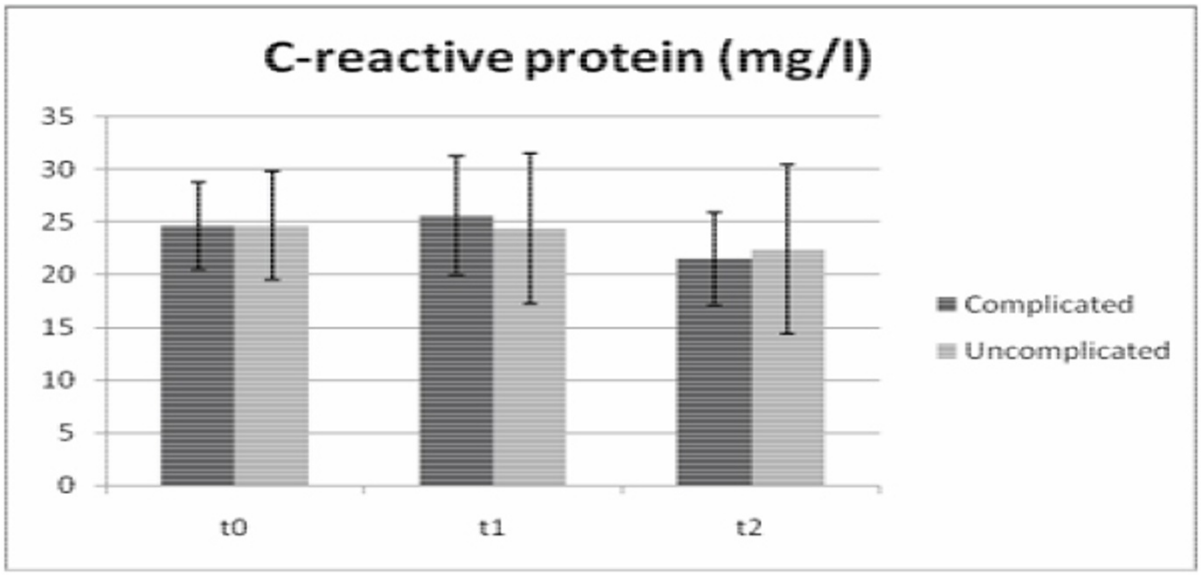

Figure 3

Conclusion

Recent studies show that preoperative IL-6 and IL-10 serum levels are higher in patients with colorectal cancer than in control patients.

Our study is still ongoing and it suggests that the measurement of cytokines serum levels is not useful in predicting anastomotic leakage. Despite this, we want to investigate, in particular, the role of IL-10. This cytokine influences the T-helper linked immunological response (suppression activity) and it may have a role in favoring anastomotic leakage. However, because the study is still ongoing, we need to evaluate more data to investigate the role of cytokines in anastomotic leakage.

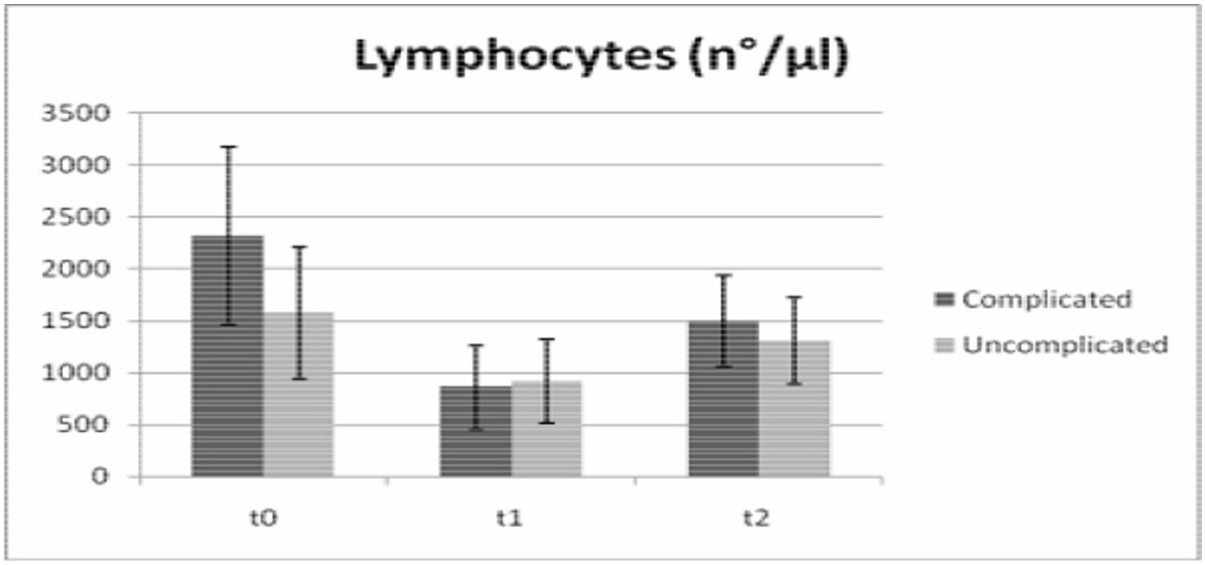

Figure 4

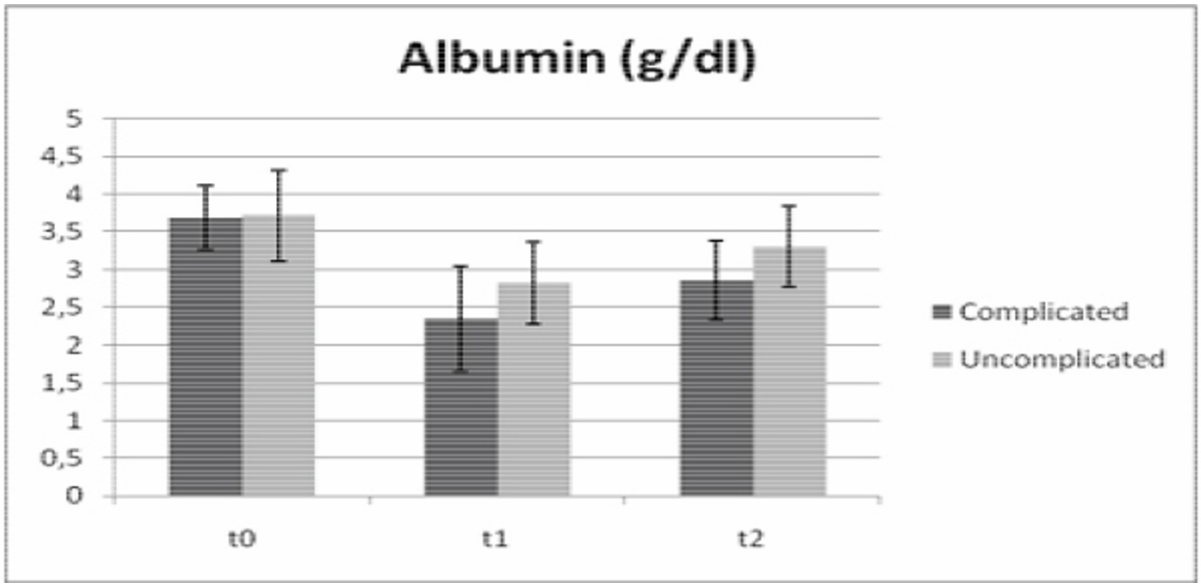

Figure 5