CPI^{60} total activity of cysteine pep-tidase inhibitors can be used as markers of the total defense of 'own' organism. I would also propose determination of the difference between CPI^{60} and CPI^{36} (ΔCPI) to find out the amount of the complex of inhibitors with cysteine endopeptidases. The parameters, taken as a ratio of the levels of 'tumor aggressivity' and 'defense of organism', might be useful in the diagnosis of a cancer, as well as in new efficient therapy.[7,8]

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Intrapleural and intraperitoneal palliative treatment of malignant effusions with mitoxantrone

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In a recent article, Torsten *et al.*[1] investigated the effect of intrapleural mitoxantrone. They found that malignant pleural effusion could be stopped for a mean period of 3.2 months in 11 of 12 patients.

Mitoxantrone has several characteristics that make it an optimal drug for local administration, i.e. high local advantage of its pharmacokinetics, extensive tissue binding, steep dose-dependent cytotoxicity and good tolerability by the tissue.[2,3] Since 1991 we treated seven patients with malignant effusions (three pleural and four peritoneal) with intracavitary administration of mitoxantrone. All patients were refractory to systemic chemotherapy. Pleural or peritoneal effusions were drained as completely as possible by simple needle aspiration. Mitoxantrone, dissolved in 100 ml of physiologic saline (20 mg for pleural effusion, 40 mg for peritoneal effusion), was instilled into the cavity via a catheter. Response was defined as follows. Complete response (CR) meant that there was no reaccumulation of fluid or no progression of the residual small effusion within the first 30 days. Partial response (PR) was defined as the relapse of effusion up to 50% of the pretreatment condition. Progressive disease (P) was accepted as the relapse of the effusion of more than 50% of the initial fluid. While four of the patients with malignant peritoneal effusion had PR, three patients with pleural effusion showed progression after 2 weeks of mitoxantrone instillation. The durations of responses with peritoneal effusion were 7, 8, 9 and 16 weeks. All patients with pleural effusion died within 2 months. Two patients with peritoneal effusion died within 4 months and two were alive at 4 months with relapse of the effusion (Table 1).

The results of our study do not support the idea[1,4] that local therapy with mitoxantrone is useful in the

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Table 1. Primary site of the tumor and response

Age/ sex	Primary site	Site of effusion	Response	Response duration (weeks)
67/F	stomach	peritoneal	PR	8
51/M	stomach	peritoneal	PR	7
35/F	breast	peritoneal	PR	9
60/F	mesothelioma	peritoneal	PR	16
39/M	rectum	pleural	P	—
50/F	lung	pleural	P	—
29/F	breast	pleural	P	—

palliation of malignant pleural effusion. We think local administration of mitoxantrone deserves further investigation.

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