

mour growth rate delay and after surgery by frequency of appearance and growth rate of recurrent tumour. Systemic IL-2 effect was estimated by frequency of appearance and tumour growth rate of untreated non-extirpated "marker" tumour and metastasis incidence. Efficacy of the IL-2 treatment was evaluated by survival improvement in the IL-2 treated groups *versus* survival of the control mice.

Previously we published that single PT 2.5×10^6 ME IL-2 treatment caused inhibition of early appearing transplantable Bc-MAC in the therapeutic mouse model. However, only trend to Bc-MAC inhibition was observed here after a single IT 1×10^6 ME IL-2 treatment. Possible explanations were more aggressive tumour growth in male recipients, smaller IL-2 dosage used, and/or another set of application: IT *versus* PT. For further analysis 2 subgroups of individual tumours were distinguished within Bc-MAC model at the time of a single IL-2 application (day 10 *pt*): (1) $lag^{>10d}$ having palpable tumours ≤ 5 mm of size, $n=23$ (12 treated males and 11 controls), and (2) $lag^{<10d}$ having visible tumours >5 mm of size, $n=10$ (5 treated males and 5 controls). Analysis of tumour growth rate within $lag^{>10d}$ subgroup at day 13 *pt* showed significant delay in tumour growth rate of the IL-2 treated MAC (5.78 ± 0.59 mm, $n=12$) *versus* this parameter in controls (7.65 ± 0.62 mm, $n=11$), $p < 0.05$. However, single IL-2 injection in the visible at day 10 $lag^{<10d}$ Bc-MAC resulted in a tendency to tumour growth stimulation; probably IL-2 treatment was applied too late to these tumours.

In the late appearing B6-MAC model there was no tumour growth inhibition/stimulation found in the firstly treated $lag^{<4w}$ subgroup (day 29 *pt*). Treated later $lag^{>4w}$ subgroup (day 42 *pt*) showed tendency to tumour growth rate stimulation.

Finally, before surgery we detected significant local tumour growth rate delay in the only $lag^{>10d}$ Bc-MAC subgroup. Importantly, both early appearing $lag^{<10d}$ Bc-MAC and late appearing $lag^{>4w}$ B6-MAC treated MAC exhibited trend to tumour growth stimulation. These results are in accordance with previously published data in mouse models of breast cancer and show that IL-2 therapy effect is strongly dependent on duration of latent tumour growth period, initial tumour size, and time of application. The IL-2 therapy advantage is proposed to be tightly dependent on a step of tumour-host interactions and, therefore, to be beneficial for a recipient only within a distinct phase (hypothesis of "closed frames" success). Consequently, this "closed frames" successful phase should be clearly recognised in an individual recipient before the IL-2 application.

Analysis after surgery showed, that frequency of cases with relapse was 50% in both the IL-2 treated and the control Bc-MAC. However, significant delay in recurrent tumour appearance and re-growth rate in treated mice comparing with these parameters in controls was observed. Early after surgery (before day 36

pt) treated mice survived better comparing with survival of controls that died bearing large recurrent right-sided Bc-MAC and pronounced metastases in the lungs. The longest treated survivors *versus* controls also demonstrated improved survival (after day 42 *pt*) due to absence of recurrent Bc-MAC, delayed marker tumour growth, and postponed metastasis spread. Average survival of treated males, however, was not prolonged, probably, due to the higher metastasis rate in the IL-2 treated males died between day 36 and 42 *pt* *versus* lower metastasis rate in the controls died within the same time. Similarly to all our previous observations, the longest survivors in Bc-MAC model were from the IL-2 treated group.

None recurrent B6-MAC was observed in both treated and control groups of B6 females validating our approach to use *contra lateral* marker tumour to detect the systemic IL-2 effect in this model. Interestingly, incidences of the cases with marker B6-MAC growth were higher in the IL-2 treated females in both $lag^{<4w}$ and $lag^{>4w}$ subgroups. However, the marker growth rate was significantly delayed in the treated *versus* the control females when calculated for the only tumour bearing females. This lead to improved survival in the IL-2 treated $lag^{<4w}$ subgroup (71% *versus* 50% in control) and the similar survival in the IL-2 treated $lag^{>4w}$ subgroup (57% *versus* 50% in control), day 105 *pt*.

Finally, clear indications of both local and systemic effects of a single *intratumoral* IL-2 treatment *prior* surgery in both models were registered. Survival was prolonged for distinct proportion of $lag^{>10d}$ recipients in early appearing Bc-MAC model and for $lag^{<4w}$ subgroup in late appearing B6-MAC model. Single IT IL-2 application in a schedule used, however, with precautions may be recommended to treat mammary carcinoma in medical and veterinary practice as both advantages and disadvantages were clearly shown.

The work was submitted to V international scientific conference «Present-day problems of experimental and clinical medicine», Thailand, February, 20-28, 2008. Came to the editorial office on 29.12.2007.

MODIFIED OSTEOSCINTIGRAPHY IN SKELETAL SYSTEM FOCAL LESIONS DIAGNOSTICS

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A traditional method of metastatic lesion foci visualization is the method of osteoscintigraphy with the preparation Technephor-Tc-99m, which represents a sodium pertechnetate lyophilizate and has an ability to get involved in the phosphoric metabolism, be connected with calcium hydroxylate and accumulated in the skeleton.

A standard osteoscintigraphy method supposes an intravenous introduction of Technephor-Tc-99m and a polypositional examination in a gamma-camera after a three-hour interval necessary for the preparation fixation in bones and pathological formations. It should be noted that the preparation is excreted through kidneys and, at their disturbed function, which is especially often detected in the patients with metastases at cancerous lesion of prostate gland, the preparation fixation occurs in the distorted pelvicalyceal system, which can look like a pathological fixation point in lower ribs in many views. In this connection a standard examination was modified by us. The primary administration was exercised directly under the gamma-camera detector resting on the lumbar region to visualize the preparation excretion through kidneys with the first 20 minutes record.

660 metastatic bone lesion suspects were examined. The primary lesion site in 199 patients was diagnosed in the prostate gland, in 279 patients – in mammary gland, in 101 ones – in the womb and ovaries, and 33 – in lungs, in 12 – in the thyroid body (36 patients – other focalizations). In 80% of the cases the patients were followed up after chemotherapy and operative intervention at the primary site. The rest of the patients were sent to be investigated after the initial examination in the Republican Oncologic Dispensary. An X-ray examination was carried out in all the patients beforehand. Thereat, only in 51 patients were supposed to have metastatic processes in the bones. 128 patients were preliminarily examined with the CT.

Due to our investigation: in 573 patients the preparation pathological fixation foci were detected. Most commonly (about 69%) the foci were visualized in the hip bones, back bone (about 60 %), ribs and breast bone (about 443%), limbs (about 21%), cranial bones (about 10%). A single pathologic focus was detected only in 19% of the cases. In the rest situations a multiple affection (from 1 to 12) was detected.

It should be emphasized that in 132 patients (23% of the patients) the detected alterations were wrongly evaluated at the X-ray examinations as degenerative-dystrophic or traumatic ones, or as the alterations of inflammatory character. In 13 patients the osteoscintigraphy method allowed not only verifying the metastatic lesion foci, detected by the CT, but also detecting new, not found out earlier, ones.

The modification of the method with preliminary visualization of kidneys allowed not only detecting the presence of the inadequate filtration-excretion function of kidneys, but also taking the findings into consideration at the following analysis of the focal lesion in the gross per cent of the cases. This data consideration allowed excluding a falsely visualized abnormal fixation focus of the preparation in 51 patients (21 prostate gland cancer patients and 30 patients with a pathological process of other focalizations).

The work was submitted to international scientific conference «Basic and applied research in medicine»,

Nov. 26 - Dec. 4, 2008 China (Beijing). Came to the editorial office 22.10.2008.

WOUND SURFACE DEFENCE METHOD

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The infectious complications frequency at operations achieves 10%, the operative wound purulence within the structure of infectious complications having the maximal specific density, achieving 48,7%. The dominant cause of it is the abdominal wall wound intraoperative contamination, consisting in the contact diffusion of ascites bacterial population in there. Most often it occurs during the operations performed concerning acute surgical pathologies attended by the hollow organs' destruction. The main, traditionally used method of the abdominal wall wound walls defence is draping with gauze wads. However, it cannot fully prevent from the wound microbial contamination and its following purulence.

We have developed a postoperative pyoinflammatory complication prevention method based on the operative wound defence during the operation. As the draping material we used the carbon containing bandage (CCB).

It is a sorption band based on the activated carbon cloth developed in the city of Perm. The sorption capacity of the CCB material relative to bacterial cells is at the average 17 times higher than that of gauze fabric. The CCB possesses an appreciable quantity of medium and large transport pores, which provide good absorption abilities of the adsorbent with regard to medio- and macromolecular toxins and microbial cells; besides, by virtue of its physical and chemical properties, this adsorbent is promising as a matrix immobilizing medicinal preparations for local action on itself. The gauze wads containing the adsorbent are prepared in advance in the form of a wide strip conforming to the wound width and are autoclaved. Hypochlorite in the concentration of 600 mg/l by dipping into the solution for 10-20 min is immobilized on them just before the use. The drape fixation together with the adsorbent is performed by scarce interrupted stitches towards the aponeurosis edges before the infected abdominal cavity opening.

The wound surface defence from purulent effluent offered by us is easy to use, doesn't stretch out the operation time; the adsorbent appears as an effective carrier of an antibacterial preparation - hypochlorite.

The method has been approved in a clinical unit in 215 patients with operations on the abdominal cavity organs; there were no complications in the postoperative period on the part of the operative wound in this patient group registered.