Methods: Moderately immunogenic HPV-16-associated TC-1 tumour mimicking human HPV-16-associated neoplasms was used to examine the effect of local interleukin-12 gene therapy with a genetically modified tumour cell vaccine for the treatment of minimal residual tumour disease, obtained after cytoreductive chemotherapy (CMRTD) with ifosfamide derivative CBM-4A, on the distribution and activity of tumour-infiltrating cells.

Results: After chemotherapy, histological and immunohistological examinations showed a decrease or disappearance of CD4+ and CD8+ T cells as well as macrophages. The administration of the vaccine led to the abundance of macrophages and renewal of CD8+ and CD4+ cells in the tumour nodules. The FACS analysis of tumour-infiltrating cells showed a significant increase in CD11c+ cells after chemotherapy and
subsequent immunotherapy. Moreover, CD45+ tumour-infiltrating cells isolated from the treated animals exhibited, after short-term in vitro precultivation, renewed cytotoxic and proliferation potential.

**Conclusion:** These findings contribute to the relevance of the treatment of CMRTD with genetically modified cellular vaccines. **Acknowledgement:** This work was supported by grants: 301/06/0774 (GA CR), Joint project PAN and AS CR (2006-8).