

## **Abstract**

The immune system participates in many defence mechanisms of the body which involve the action of different types of immune cells. Immune cells play an important role in tumour development and progression. They infiltrate tumours and contribute to the tumour microenvironment. They are also implicated in diseases associated with human papillomavirus infection. Human papillomaviruses are viruses with oncogenic potential which cause infection in a number of anatomical locations of the human body. Such infection can lead to benign lesions, pre-invasive lesions, and invasive tumours. Pre-invasive lesions often regress spontaneously, but at advanced stages of the disease, progression to malignancy can occur. The tendency to regress or progress varies depending on the HPV genotype involved in the lesion and the quantity, type, and location of infiltrating immune cells. The synergy of these factors influences the prognosis and treatment of the disease, and, therefore, determining the immunological score as an important diagnostic parameter becomes of utmost relevance.

The knowledge of the effect of immune cells on tumour cells is useful in immunotherapy, which is based on the activation of the patient's own anti-tumour immune mechanisms. Immunotherapy is used in combination with systemic therapy for the treatment of residual disease and has the potential for use as the monotherapy in the future.

This thesis summarizes the findings about immune cells that infiltrate pre-invasive lesions and tumours induced by HPV and describes their relationship to the prognosis of the disease. Finally, the potential of immunotherapy for the treatment of these diseases is pointed out.

**Key words:** immune cells, HPV, cancer, pre-invasive, microenvironment, immunotherapy