

## **ABSTRAKT – EN**

The main content of this thesis is to analyse results of immunohistochemical examinations of bioptic samples of breast cancer tissues. In every workplace each examination must include a determination of estrogen and progesterone receptors level, antigen Ki-67 level and HER-2/neu expression. Only on basis of these data the doctor will be able to diagnose correctly the carcinoma and choose the appropriate therapy. The examination isn't taken the same way in every workplace. It is therefore suitable to have data from different hospitals, so we could make a complete view on the problem. This thesis is focused only on data from Prague hospital Na Bulovce, but our school workplace has already the data from other laboratories, so they can work it out additionally.

In the theoretical part of this thesis we described the problem of breast carcinoma in general, we presented a list of carcinoma types and we described closer two of the most frequent - invasive ductal and invasive lobular carcinoma. We deal with these types of breast cancer in practical part. In further chapters we explain how the grading is appointed. We characterized all main markers of breast carcinoma examination and ways of performing the tests. Then we mentioned few possible causes of artifacts – ovarian cycle, intratumoral production of steroid hormones or hormonal substitutional therapy. We explained briefly the principle of statistical Wilcoxon test, which was used in practical part.

In the practical part there is a description of the method by which our samples were handled. We wrote about how we analysed the acquired results. We created graphical marker dependence on the age, average marker values dependence on the age and marker dependence on the grade. We described also how to work with the PC program, we used for testing of statistical significance of some findings. In the Result chapter we showed graphical dependences and results of statistical tests and we compared our information with other authors in the research literature.

We confirmed statistically significant age-depending increase of estrogen receptor. Levels of steroid receptors were significantly lower at G1 lobular carcinoma compared to analogous group of ductal carcinoma. At both types of steroid receptors we found statistically significant differences between grades – the higher the grade is, the lower the receptor expression is. Contrarily the expression of marker of proliferation Ki-67 is significantly higher at the higher carcinoma grade.