

2. SUMMARY

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Title of a work: HER-2/neu and other markers in breast tumours

Diploma work

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Study programme: Healthcare bioanalytics

The aim of our diploma work is to bring an overview of the tumour marker HER-2/neu especially with focus on its activation, laboratory detection, relation to hormonal receptors, its role in tumorigenesis of breast carcinoma and also on the examination of its prognostic importance and its relation to the breast cancer treatment.

In the clinical part of this review work we target especially the prognostic and predictive value of HER-2/neu. In many studies, a bad prognosis of HER-2/neu positive breast cancer was confirmed. In this connection the importance of determination of extracellular domain HER-2/neu in serum was examined in the literature. It is proved, that observation of this parameter is useful for monitoring of the patients with HER-2/neu positive carcinomas and there is also proved its predictive importance for the trastuzumab treatment.

Another topic investigated in this work is expression of HER-2/neu de novo. Two studies, we found, confirm the opinion, that an amplification of HER-2/neu de novo can emerge in any stage of the breast cancer.

In connection with an elevated expression of HER-2/neu, there has been a significant decrease of the estrogen and progesterone receptors (ER, PR) described by some authors. This finding correlates with the result of our comparison of a group of patients in the Pardubice regional hospital, which confirms that almost no case of the simultaneous HER-2/neu positivity and ER and PR positivity was found.

We analyzed also the results of the Pardubice regional hospital patients considering the age of patients. We found a higher occurrence of HER-2/neu positivity among postclimacterical patients with non-selected breast carcinomas. Contrary to our conclusion, one foreign study declares HER-2/neu positivity only for preclimacterical patients with an

invasive ductal carcinoma. Nevertheless, we found no further indications concerning the relation between HER-2/neu positivity and the age of patients.

At the end of the clinical part of our work we investigate refer about the possibility of treatment with immunogenic peptid E75 made from the HER-2/neu protein. It was proved, that the vaccine E75 can result in reduction of repeated arising of metastases among patients treated with conventional methods.

We consider some information presented in our work as possibly useful for further enrichment of Czech literature with the new knowledge from the point of view of evaluation of importance of HER-2/neu in the breast carcinoma.