Expression of the proliferation marker Ki-67 and of p53 tumor protein in trophoblastic tissue of preeclamptic, HELLP, and intrauterine growth-restricted pregnancies.

Abstract:

The human placenta owns the biochemical machinery to proliferate throughout gestation. The aim of this study was to investigate the expression of the proliferation marker Ki-67 in trophoblastic tissue of intrauterine growth retarded (IUGR) placentas, preeclamptic, HELLP, and in normal trophoblastic tissue. Slides of paraffin-embedded trophoblastic tissue of patients with IUGR, preeclamptic patients, HELLP patients, and normal term placentas were incubated with monoclonal antibodies against Ki-67 and p53. Staining reaction was performed with the ABC reagent. Intensity of immunohistochemical reaction on the slides was analyzed using a semiquantitative score. Identification of Ki-67-expressing cells was done by immunofluorescence double staining with Ki-67 and cytokeratin antibodies. Expression of Ki-67 and p53 are significantly elevated in cytotrophoblastic cells of placentas with HELLP as investigated by immunohistochemistry and double immunofluorescence. However, preeclamptic cytotrophoblastic tissue on the other hand showed no significantly different expression intensity of Ki-67 compared with normal placental tissue controls and no changes in p53 expression compared with controls. In IUGR cytotrophoblastic cells, we found no statistically significant change in Ki-67
expression but a statistically significant down-regulation of p53. An elevated proliferation of
cytotrophoblastic cells seems to be related to HELLP, and this enhanced proliferation seems to be
controlled by p53.