THE EXPRESSION OF GHRELIN, HSP70, BCL-2 AND BAX PROTEINS IN IDIOPATHIC THROMBOCYTOPENIC PURPURA AT BONE MARROW

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OBJECTIVES

The main factor in the pathogenesis of ITP is the shortening of the thrombocyte lifetime, and many studies have been conducted for this purpose. Oxidative damage plays role in the pathogenesis of autoimmune diseases. There are a limited number of studies that state that each of the factors such as oxidative effect, antioxidant mechanism, apoptosis, and anti-apoptosis have individual effects.

METHODS

45 patients diagnosed with ITP were included in the current study. During the 6-month follow up period, 23 cases in which thrombocytopenia improved were included in the newly diagnosed ITP group, and 22 cases in which thrombocytopenia did not improve were included in the chronic ITP group. 20 cases in which a solid tumor was detected and who had normal BMA findings and biopsy were included in the control group. In the current study, the bone marrow biopsy that was performed to diagnose ITP, was immunohistochemically evaluated in terms of diffusiveness of staining, intensity of staining, and staining score individually, in paraffin block samples by administration of ghrelin, Hsp70, Bcl-2, Bax.

Table 1. Ghrelin dye assessment of ITP and control group

Ghrelin n, (mean±SD) (lower-upper)	The newly diagnosed ITP (n=23)	Chronic ITP (n=22)	Total ITP (n=45)	Control (n=20)
Diffusiveness	2,43±0,66 (1-3)	1,72±0,70**b** (1-3)	2,08±0,76 (1-3)	2,10±0,64 (1-3)
Intensity	1,82±0,57 (1-3)	1,27±0,45**ab** (1-2)	1,55±0,58**a** (1-3)	1,85±0,48 (1-3)
Staining score	2,43±0,66 (1-3)	1,72±0,70**b** (1-3)	2,08±0,76 (1-3)	2,10±0,64 (1-3)

Data were expressed as mean±standard deviation.
a, by a comparison with the control group; p <0.05 **b,** according to the newly diagnosed ITP group; p <0.05

Table 2. Hsp70 dye assessment of ITP and control group

Hsp70 n, (mean±SD) (lower-upper)	The newly diagnosed ITP (n=23)	Chronic ITP (n=22)	Total ITP (n=45)	Control (n=20)
Diffusiveness	2,60±0,49 (2-3)	2,72±0,45 (2-3)	2,66±0,47 (2-3)	2,45±0,60 (1-3)
Intensity	2,17±0,57 (1-3)	2,18±0,45 (2-3)	2,17±0,49 (2-3)	2,20±0,69 (1-3)
Staining score	2,60±0,49 (2-3)	2,72±0,45 (2-3)	2,66±0,47 (2-3)	2,45±0,60 (1-3)

Data were expressed as mean±standard deviation.

Table 3. Bcl-2 dye assessment of ITP and control group

Bcl-2 n, (mean±SD) (lower-upper)	The newly diagnosed ITP (n=23)	Chronic ITP (n=22)	Total ITP (n=45)	Control (n=20)
Diffusiveness	0,13±0,45 (0-2)	0,18±0,58 (0-2)	0,15±0,52 (0-2)	0,25±0,63 (0-2)
Intensity	1,00±0,00 (1-1)	1,04±0,2 (1-2)	1,02±0,14 (1-2)	1,00±0,00 (1-1)
Staining score	1,04±0,20 (1-2)	1,09±0,29 (1-2)	1,06±0,25 (1-2)	1,10±0,30 (1-2)

Data were expressed as mean±standard deviation.

Table 4. Bax dye assessment of ITP and control group

Bax n, (mean±SD) (lower-upper)	The newly diagnosed ITP (n=23)	Chronic ITP (n=22)	Total ITP (n=45)	Control (n=20)
Diffusiveness	2,39±0,58 (1-3)	2,68±0,47 (2-3)	2,53±0,54 (1-3)	2,60±0,50 (2-3)
Intensity	1,86±0,54 (1-3)	1,95±0,37 (1-3)	1,91±0,46**a** (1-3)	2,15±0,36 (2-3)
Staining score	2,39±0,58 (1-3)	2,68±0,47 (2-3)	2,53±0,54 (1-3)	2,60±0,50 (2-3)

Data were expressed as mean±standard deviation.
a, by a comparison with the control group; p <0.05

RESULTS

In all cases with ITP, the intensity of Bax staining was significantly lower than the control group (p<0.05). No statistically significant difference was observed in terms of Bax diffusiveness of staining and staining score (p>0.05). There was no significant difference between the study groups in terms of diffusiveness of staining, intensity of staining, and staining score with Bcl-2 (p>0.05). There was no significant difference between the study groups in terms of diffusiveness of staining, intensity of staining, and staining score with Hsp70(p>0.05). In the chronic ITP group, the diffusiveness of staining and staining score with ghrelin were significantly lower when compared to the newly diagnosed ITP group, and the intensity of ghrelin staining was significantly lower when compared with the newly diagnosed ITP group and the control group (p<0.05). No significant difference was found between the study groups in terms of ratios of Bcl-2/Bax and Hsp70/Bax staining scores (p>0.05). However, the ghrelin/Bax staining score ratio in cases with chronic ITP was significantly lower than the cases with the newly diagnosed ITP (p<0.05) (Table 1, 2, 3, 4).

CONCLUSIONS

Whether finding a low Bax value, which is an oxidant parameter, in all groups, and finding only a low value of ghrelin among the antioxidant parameters such as ghrelin, Bcl2 and Hsp70, is a result or the cause of the events in ITP, is a subject of discussion. In the light of this information, we believe that it is insufficient to consider the antigen-antibody reaction to be responsible for the structural and functional changes in thrombocytes and the mechanism of thrombocytopenia.

REFERENCES

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