

### Short and Mid-Term Effects Of Transcatheter Ventricular Septal Defect Closure Treatment On Nutritional Hormones

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#### Objectives:

The aim was to investigate the changes in nutritional hormones of patients before and after the transcatheter closure of Ventricular Septal Defect (VSD).

#### Method:

The study was prospective and case-control and carried out in our Pediatric Cardiology Clinic. 20 VSD patients (13 girls-7 boys, age:2-171 months) and as control group, 26 healthy subjects (16 girls-10 boys, age:3-187 months) were enrolled in the study. Blood samples were collected from all children early in the morning. Insulin growth factor-1 (IGF1), insulin growth factor binding protein-3 (IGFBP-3) and their z scores (sds), insulin, total protein, albumin parameters were evaluated. Serum ghrelin and leptin levels were measured using ELISA technique. Laboratory tests and appetite evaluation were repeated at the 1st and 6th month controls in the patient group.

#### Results:

When the initial laboratory parameters of the patients and control group compared; leptin level (median:1981,5 pg/mL) was statistically significant lower than the control group ( $p=0.010$ ). IGF-1 (median:42.5 ng/mL), IGFBP-3 (median: 2495 ng/mL) and Albumin (median: 4,17 g/dL) levels were significantly lower in the patient group ( $p=0,027$ ,  $p=0.018$ ,  $p =0.035$ ). The ghrelin level (median:1078 pg/mL) was statistically significant higher in the patient group compared to the control group ( $p=0.037$ ). In the VSD group, IGF-1 ( $p=0,003$ ), IGF-1 sds ( $p=0,042$ ), IGFBP3 ( $p=0,037$ ) and IGFBP3 sds ( $p=0,030$ ) levels were revealed statistically significant higher at first control according to initial level. Ghrelin and leptin levels increased at the 1st month control then decreased toward 6th month. However, these differences were not statistically significant. Anorexia group ( $n=9$ ) was compared to non-anorexia group ( $n=11$ ) with laboratory tests. There was no statistically significant difference. The anorexia was decreased at the first control and was described in only 2 patients. Eight of 20 patients did not come to 6th month control visit. Initial,1st,6th month controls of the 12 patient were evaluated within themselves, a gradual increase of IGF-1 sds and IGFBP-3 sds were determined.

#### Conclusion:

Nutritional deficiency and growth retardation are important problems in patients with VSD. Positive effects on nutritional hormones have been demonstrated in surgical treatments. In our study, we demonstrated the positive effects of transcatheter closure treatment on nutritional hormones.