

Long-term efficacy and withdrawal of octreotide LAR in acromegaly patients, a prospective single centre study with 4 years follow up

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Objective

The aim of this single centre prospective open trial was to evaluate the long-term efficacy of octreotide LAR in acromegaly patients and possibility of withdrawal of this therapy.

Methods

In total 17 patients with acromegaly diagnosed at Endocrinology Clinic in Sarajevo, somatostatin sensitive (10 females and 6 males, age range 37-65 years, 6 patients with microadenoma and 10 patients with macroadenoma) were treated with octreotide LAR. Follow-up period was 4 years (2009-2014). Ten patients were treated with surgical and octreotide treatment. One patient was treated with surgical, octreotide and gamma-knife treatment and six patients were treated only with octreotide LAR. The concentration of human Growth Hormone (hGH) and Insulin-Like Growth Factor I (IGF-1) were evaluated before treatment and every 6 months during follow-up period of 4 years, while magnetic resonance imaging (MRI) was taken before the treatment and every year during follow-up period. Thirteen patients received octreotide 30 mg/28 days, two patient received 20 mg and other two 60 mg/28 days. Statistical data analysis includes basic statistics, descriptive statistics and nonparametric statistics (Friedman, Wilcoxon signed ranks test and Mann-Whitney U-test). Statistical significance was set as $p < 0.05$. Copy and paste your text content here, adjusting the font size to fit.

Keywords: acromegaly, human growth hormone, insulin-like growth factor I, octreotide, pituitary adenoma

Results

Table 1. The level of HGH, IGF-1 and size of pituitary adenomas during 48 months follow-up period of Sandostatin LAR treatment

Follow-up	n	HGH (ng/ml)	IGF-1 (ng/ml)	Size of adenoma (mm)
0	10	50,87	777	9,57
6 months	10	1,61 (a)***	305,90 (a)***	
12 months	10	1,85 (a)***	256,99 (a)***	8 (b)**
24 months	17	1,61 (a)***	305,90 (a)***	5 (b)**
36 months	16	2,11 (a)***	337,33 (a)***	7,2 (b)**
48 months	11	2,0 (a)***	276 (a)***	6 (b)**

a - Friedman test; b - Wilcoxon Signed Ranks Test

* $p < 0.05$; ** $p < 0.01$; *** $p < 0.005$

During the first year of treatment 10 patients were included. In the second year a further seven patients were involved. At one patient treatment was successful discontinued without subsequent recurrence during follow-up. After 2 years, at another 2 patients treatment was off because well-controlled acromegaly, one patient was died due to co-morbidities and at one another patients treatment was off due to kidney cancer. After 3 years of treatment one of patient must be subjected to gamma-knife treatment followed by continued treatment with 30 mg of octreotide LAR and at one patient the dose was increased up to 60 mg. During the fourth year of follow-up, the treatment was successful discontinued at another one patient, so currently we followed total of 11 patients; 8 of them used therapy for 4 years and 3 of them used therapy for 3 years. During follow-up period octreotide LAR treatment significantly reduced GH (50.87 ± 10.56 vs 2 ± 0.36 ng/ml, $p < 0,005$), IGF-1 (777.66 ± 118.40 vs 276 ± 80.54 ng/ml, $p < 0,005$) and adenoma size (from 9,6 to 6 mm; $p < 0,01$). After therapy, a GH decrease to less than 2.5 ng/ml was achieved in 82% of cases; tumor size decrease was achieved in 60% while normalization of IGF-1 was achieved in 91% of the patients, respectively. At 12-24 months of follow-up, 23,5% of somatostatin sensitive acromegaly patients had withdrawn treatment, without recurrence.

Conclusion

Our findings demonstrated that octreotide LAR treatment is very effective in decrease of GH, IGF-1 and tumor size and their withdrawal, though rare, is possible in well-selected acromegalic patients treated for at least 2 years and considered optimally controlled in hormonal and neuroradiological terms.

References

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