Case Report

Short Term Use of Octreotide in Acromegaly

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Abstract

A 44-year gentleman with acromegaly underwent transphenoidal excision of pituitary macroadenoma followed by radiotherapy. Since he had poor glycemic control necessitating multiple insulin doses, he was started on subcutaneous octreotide. With this, his blood sugars came under control rapidly and insulin could be withdrawn fully. This case report highlights the use of octreotide in a specific clinical situation in acromegaly to improve the quality of life.

INTRODUCTION

Acromegaly is a debilitating disorder that usually develops over many years due to long term exposure to GH. Initial therapy for Acromegaly is surgical in most cases, with follow up treatment consisting of medical therapy and various forms of radiation. Somatostatin analogues are the mainstay of medical treatment. They are expensive and there is limited experience in the use of this in India. We present an operated case of Acromegaly, not cured following surgery where Octreotide was used to maintain normal GH levels till the radiotherapy became effective.

CASE REPORT

44-year-old gentleman presented to us with increase in hand and foot size of 17 years duration. He gave history of diabetes mellitus and was on treatment with T. Glibenclamide with poor glycemic control. He did not have any symptoms of raised intracranial tension. On examination, he was hypertensive with facial and acral features classical of acromegaly. He had multiple skin tags and acanthosis nigricans. MRI showed a 2.0 x 2.1 x 1.8 cm sellar lesion with mild protrusion to the suprasellar cistern. There was no extension into cavernous sinus. Following control of blood sugars with multiple dose insulin, he underwent transsphenoidal excision of the pituitary macroadenoma, which was uneventful. Since he was not cured post operatively (PGGH: 30 ng/ml), he was subjected to conventional fractioned radiotherapy 4500 Gy. Following surgery, he had uncontrolled blood sugars requiring insulin in multiple doses thereby leading to absence from work and poor quality of life. This necessitated starting of Octreotide to control the disease activity.

An Octreotide challenge test done was positive, (Table 1) and was hence subcutaneous Octreotide in a dose of 50 mg thrice daily was started. Ultrasonogram done prior to Octreotide showed a single gallbladder calculus 1 cm in size. The serial response to Octreotide treatment was assessed by serial PGGH done after discontinuing therapy for 48 hours. (Table 2) The doses were titrated based on the PGGH values. The dose of Octreotide was reduced to 50 μg twice daily after 4 months. During the initial 3 days of therapy, he developed flatulence and dizziness that later subsided. During the course of therapy, the patient experienced hypoglycemic episodes necessitating reduction of insulin and later withdrawal. Within 2 weeks of starting therapy, the doses of insulin could be reduced and the patient resumed work. The insulin requirement of the patient reduced from a pre octreotide dose of 88 U/day to nil in 3 months of Octreotide therapy.

<table>
<thead>
<tr>
<th>Months of treatment</th>
<th>PGGH (ng/ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preop</td>
<td>30</td>
</tr>
<tr>
<td>Immediate Post op</td>
<td>10.1</td>
</tr>
<tr>
<td>1</td>
<td>8.8</td>
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<tr>
<td>3</td>
<td>10.3</td>
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<tr>
<td>9</td>
<td>4.7</td>
</tr>
<tr>
<td>Stopped Octreotide</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>2.7</td>
</tr>
<tr>
<td>8</td>
<td>0.93</td>
</tr>
<tr>
<td>19</td>
<td>1.2</td>
</tr>
<tr>
<td>46</td>
<td>0.14</td>
</tr>
</tbody>
</table>

*PGGH is done by IRMA
Octreotide was continued for a period of 9 months when it was discontinued to judge response to RT. The patient remains cured till date (Table 2). He has central hypogonadism and is on testosterone supplements.

(Abbreviations : GH = Growth hormone, PGGH = Post glucose growth hormone, RT = Radiotherapy)

**DISCUSSION**

Our patient had persistent disease activity after transsphenoidal excision of the GH producing pituitary adenoma. His quality of life was significantly impaired by the uncontrolled sugars that required multiple subcutaneous insulin regime. This necessitated medical therapy for controlling the disease activity. Short acting octreotide was the only available Somatostatin analogue in 1997 in India.

Following transsphenoidal surgery, radiotherapy can be used for patients who are not cured. Beneficial effects of radiotherapy on GH levels are dose dependent and delayed. In a long term follow up study, after RT, basal GH levels below 2.5 ng/ml were obtained in 7% of patients at 2 years, 35% at 5 years, 53% at 10 years and 66% at 15 years.1 It is not until 20 years after RT that more than 90% of patients have GH levels less than 5 ng/ml.2

Medical therapy usually with Somatostatin analogues is often required to bridge the latency period before onset of radiation effectiveness. It has been used to control GH levels in post operative and post radiotherapy patients when these modalities fail to affect a cure.3 In the largest series analysing the efficacy of Octreotide over 6 months basal GH levels fell below 2.5 ng/ml in 40% of cases with normalisation of serum IGF-1 in 64%.3 Somatostatin analogues have also been used as primary modality of therapy for Acromegaly. It has been shown to reduce the size of GH producing macroadenomas and maintaining normal GH levels in patients with Acromegaly.4

The role of Somatostatin and its analogues in achieving cure in post radiotherapy patients is not clear. Two retrospective analysis concluded that concomitant treatment with these drugs seems to counteract the effects of radiation.5,6 In our patient, it seemed to have hastened cure following radiotherapy.

In our country, subcutaneous Octreotide and its long acting preparations are prohibitively expensive. However, the judicious use of these drugs in specific clinical situations like the one described above can significantly improve the quality of life.

Somatostatin analogues are safe and effective modality for short-term use in patients with Acromegaly. The effect of these drugs in hastening cure following radiotherapy requires further study.

**REFERENCES**


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**Announcement**

**2nd Diabetes India International Conference, November 18-20, 2005 at Jaipur, India.**

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