

# Successful treatment of hypothyroidism with rectal thyroxine can be achieved with variable dose response: A case Report

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## **Introduction:**

Hypothyroidism is a common endocrine disorder worldwide. Its treatment is with oral thyroxine, but when this route cannot be utilized then intravenous thyroxine is an alternate but not available in some countries so rectal thyroxine administration can be used but clinical experience is lacking

## **Case History:**

This is a case of a 55 years old Pakistani male known case of hypothyroidism since July 2007 and was maintaining normal TSH and FT4 level on thyroxine 125 mcg/ (microgram)/day. He was diagnosed as recurrent laryngeal carcinoma and planned to undergo change of tracheostomy and feeding gastrojejunostomy surgery. As he was unable to take oral referred for hypothyroid medical optimization prior to surgery. On presentation he was constipated, lethargic had tracheostomy and was on total parental nutrition and not taking his thyroxine for last one month. His TSH was >150 U/L and FT4 was 0.44ng/dl. As the intravenous thyroxine was not available was started on rectal suppository of thyroxine 250mcg/day. The dose of rectal thyroxine gradually increased to 500mcg/day and his TSH level dropped to 8.83 U/L and FT4 level raised to 1.29ng/dl and patient underwent successfully for gastrojejunostomy and started him on thyroxine 125 mcg /day through gastrojejunostomy tube and maintaining normal TSH and FT4 level.

## **Discussion:**

Oral levothyroxine with wide brands are available worldwide for the treatment of hypothyroidism. Oral Levothyroxine has reliable response and average bioavailability of about 80% and long half life 7 days. Almost all hypothyroidism are treated orally with Levothyroxine. Some time if patients receiving unable to take oral medication for several days, levothyroxine may be administered intravenously. Some intravenous formulations of levothyroxine are available in Europe and the United States; such formulations are not available in Pakistan. Rectal administration using suppositories is an alternative for patients in whom administration via the oral route is not possible. Rectal levothyroxine compare to intravenous administration, has advantageous in that no aseptic handling is required and the patients can self-administer the drugs him or herself at home. Rectal administration of levothyroxine suppository can clinically useful for the treatment of patients with hypothyroidism in whom oral administration is not possible but the response is not as straight forward as thought. Few studies have reported the clinical efficacy of rectal administration of levothyroxine, and little is known about the pharmacokinetics of levothyroxine after rectal administration.

## **Conclusion:**

if a patient presents with hypothyroidism who cannot be treated with oral the alternate intravenous route is preferred and reliable but not widely available and then rectal route can be utilized in keeping that the response is very variable and the traditional approach about the duration of workup may be modified to more frequent workup to look for response.

