

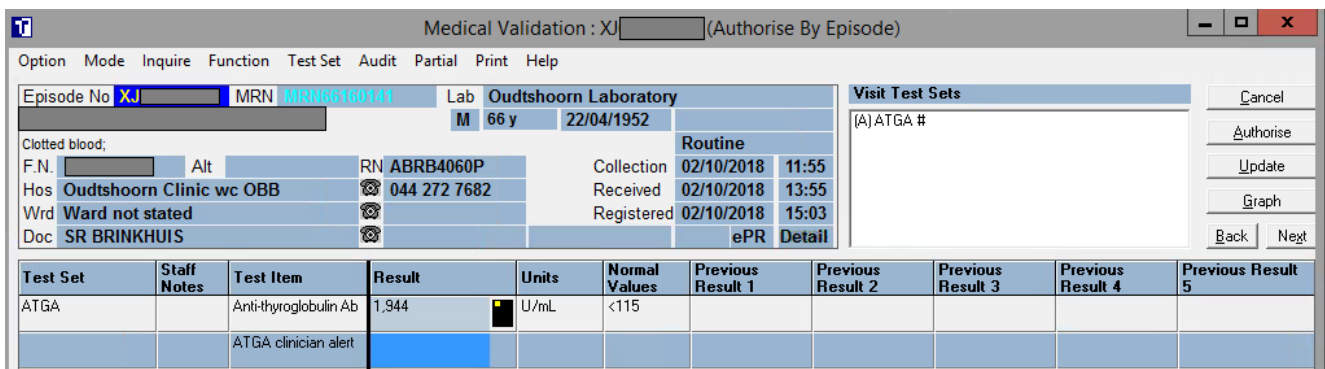
# Iron deficiency anemia with a twist

An unexpected high TSH in an adolescent near Christmas.

## Elevated anti-Thyroglobulin Antibodies

<b>HOSP #</b>		<b>WARD</b>	Oudtshoorn Clinic
<b>CONSULTANT</b>	George van der Watt & David Marais	<b>DOB/AGE</b>	66y Male

## Abnormal Result



The screenshot shows a medical validation window titled "Medical Validation : XJ (Authorise By Episode)". The patient information includes: Episode No. XJ, MRN MR2063160141, Lab Oudtshoorn Laboratory, M, 66 y, 22/04/1952. The test set is "ATGA" with a result of 1,944 U/mL, which is significantly above the normal value of <115. The test item is "Anti-thyroglobulin Ab". The interface also shows a "Visit Test Sets" section with "(A) ATGA #" and a table of previous results.

Test Set	Staff Notes	Test Item	Result	Units	Normal Values	Previous Result 1	Previous Result 2	Previous Result 3	Previous Result 4	Previous Result 5
ATGA		Anti-thyroglobulin Ab	1,944	U/mL	<115					
		ATGA clinician alert								

## Presenting Complaint

Mr. X, a 66 year old male, complained of chest pain, was seen at the Oudtshoorn Emergency department and a myocardial infarction was excluded by three serial point-of-care (POC) Troponin I results.

# History

- Known with hypothyroidism, but the cause was not defined yet.
- On Eltroxin 150 ug daily PO
- No other treatment.
- Various stool analyses had been sent in for culture, with no definitive result.

# Examination

Unfortunately not known.

# Laboratory Investigations

Free T4: 24.6 pmol/L (7.6 – 16.1 pmol/L)

Anti-Thyroglobulin Antibody levels were elevated at **1944 U/mL** (ref. <115 U/mL).

# Other Investigations

Later, by retrospective viewing of the patient's results it was revealed:

Total Cholesterol (TC) was elevated at 7.6 mmol/L. Hypothyroidism is associated with hypercholesterolemia. It can be concluded by the retrospective overview of results that upon an episode of hypothyroidism, the patient had hypercholesterolemia. This was most likely due to cessation of Thyroxine treatment, to whatever reason.

Test Item	15/04/2019 17:38	11/01/2019 17:44	31/10/2018 18:32	31/10/2018 00:24	30/10/2018 17:21	02/10/2018 15:03	03/09/2018 15:13	31/08/2018 18:19	23/02/2018 14:30
Comment									
Total chol	7,55							3,78	
Comment	CHOLC2							CHOLC2	
CRP								1	
Total PSA									
CEA									
Comment									
TSH	δ+25,53 H	δ+ 1,34			<.01 L			<.01 L	<.01 L
Free T4	δ- <3.2 L	δ- 8,9			δ- 15,9	δ- 24,6 H	34,3 H		27,6 H
Free T3							8,9 H		
Anti-thyrogl Ab						1944 H			

Index sample marked by the yellow shade. TC result which is raised (upper left corner) corresponds to the severely hypothyroid episode as revealed by the low T4 on that same sample.

Investigations also confirmatory for auto-immune hypothyroidism are:

- Anti-Thyroid peroxidase antibodies
- Anti-TSH receptor antibodies

## Final Diagnosis

Auto-immune hypothyroidism

## Take Home Messages

*Interestingly, numerous patients with hypothyroidism is diagnosed at our Lipid Clinic at Groote Schuur Hospital. Patients are being referred for hypercholesterolaemia. Generally referral to this clinic happens when TC > 7.5 mmol/L. These patients are referred as presumed to have familial hypercholesterolaemia, but upon further work-up it is found that many of these patients have long-standing untreated hypothyroidism.*

Prevalences of antithyroid antibodies as summarized by Up-to-date:

