

# Directly observed therapy in a patient with refractory hypocalcemia

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## Introduction

Hypocalcaemia in acquired hypoparathyroidism responds to oral vitamin D and calcium replacement. We describe a case of persistent symptomatic hypocalcaemia despite conventional therapy plus Teriparatide (which is a recombinant form of parathyroid hormone) and managed with supervised tablets administration.

## Case Summary

We report a 45-year-old man who developed acquired primary hypoparathyroidism based on a low serum adjusted calcium level and low parathyroid hormone level.

His past medical history included recurrent chronic anaemia requiring multiple transfusions since 2011. He was an ex- intravenous drug user, and suffered from chronic bilateral venous leg ulcers, and liver cirrhosis following Hepatitis C infection.

With regards to the recurrent chronic anaemia, he has been extensively investigated by haematology and gastroenterology colleagues, with no cause found. However, his Ferritin levels averaged around 30 much/L, suggesting blood loss and iron deficiency as the cause. We looked into the possible theory of exposure to citrate from multiple bloods transfusions as a cause of hypocalcaemia. But an avoidance of blood transfusions for two weeks did not prevent hypocalcaemia.

## Management

Despite using doses of up to 8mcg Calcitriol daily, his calcium levels fell recurrently and he required repeated intravenous calcium infusions. Vitamin D levels were repleted, as were Magnesium levels corrected as best possible (> 0.50 mol/L) using supplements and Amiloride (24 hour urine magnesium was 0.93mmol/L). He was not on a proton pump inhibitor.

Finally, Teriparatide 40mcg was added to a combination of Calcitriol 2.5mcg, calcium carbonate 10mg, Adcal D3, colecalciferol 800 units, magnesium aspartate 13g, and Amiloride 20mg daily. Yet, recurrent hypocalcaemia continued to occur requiring Infusions almost twice weekly.

Compliance with medications was questioned repeatedly with both the patient and nurses during his prolonged admission. Directly observed therapy for all his medication was carried out. With this, we were able to maintain calcium levels above the acceptable range and the patient did not require intravenous calcium replacement for 3 months.

## Investigations

Calcium	152 mmol/l
Vitamin D	10.8µg
PTH	1.40 ng/L
Magnesium	0.51mmol/L
Urine creatinine	2.0mmol(3.72mmol/24hr)
Urine Calcium	<0.25mmol
Urine Magnesium	0.93(1.73mmol/24hrs)
Urine Phosphate	3.51(6.5mmol/24hrs)
HB	52
MCV	60
Ferritin	8

## Discussion and conclusion

Non-compliance with medication poses a challenge in managing chronic conditions. Supervised treatment and enhancing good doctor-patient relationship will increase likelihood of adherence hence abating admission due to acute complications

## References:

1. Giancarelli A, Birrer K, Alban R., Hypocalcemia – an adverse effect of massive blood tranfusion. J Surgical Research 2016; 202: 182-87