

# Can myxedema coma be managed in the ward?

## A complicated patient with myxedema with peg feeding

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### Case Report:

61 years old female with multiple comorbidities such as ckd-3, Trans abdominal hysterectomy and oophorectomy for endometrial cancer, complicated by entero-cutaneous fistula, ileal conduit and cholecystectomy.

She presented with generally unwell, nausea, vomiting and confusion. On Examination she was bradycardic, low Glasgow coma score, hypotensive and hypothermic.

The metabolic causes for confusion was excluded, anion gap was normal and myxedema coma was suspected and started on intravenous triiodothyronine. She was reviewed by critical care and deemed unsuitable for critical care due to multiple comorbidities.

The investigations were as follows,

TSH >120 mu/l (Reference 0.2- 4.5)

Free T4 2.3 pmol/l (Reference 9-23 pmol/l )

Free T3 <1 pmol/l (Reference 3.5-6.5 pmol/l)

Cortisol-920

Wcc-9.8, SerumSodium-141, Serum Pottasium-3.5

Serum creatinine-243

TPO Antibody->1300 (Reference < 50 IU/l)

Arterial blood Gas showed -ph-70.4, hco3-12, po2-6.26, pco2-6.26

Serum Calcium-1.83

Chest Xray showed left basal consolidation

Echo cardiogram- a trace of pericardial effusion

U/S abdomen-fatty liver

Patient improved with i/v thyroxine, calcium, fluid, antibiotics and bicarbonate. Subsequently started on oral thyroxine with a dose of 1.7 mcg/kg as divided doses due to previous bowel surgery and short bowel. Her thyroid function improved with TSH of 0.92, Free T4 of 11.9 and Free T4 of 3.2. Patient was discharged for follow up in endocrine clinic.

### References:

1. P Dutta- Predictors of outcome in myxoedema coma: a study from a tertiary care centre- Critical Care, 2008 - ccforum.biomedcentral.com
2. Myers L Myxedema coma- critical care clin 1991 Jan
3. Wartofsky L. Myxoedema coma. *Endocrinology Metabolism Clinics of North America*. 2006;35:687-698. [PubMed]

### Introduction:

Myxedema coma is one of the endocrine emergencies, extreme manifestation of hypothyroidism, which has a high mortality, but reversible if diagnosed and treated early.

This presents with multiple organ dysfunction and mental deterioration or reduced level of consciousness due to physiological alteration to compensate thyroid hormone deficiency.

Patients with suspected myxedema coma should be admitted to intensive care unit for cardiovascular support and better care.

The patients usually have a long standing hypothyroidism which was not diagnosed earlier and presenting symptoms could be fatigue, cold intolerance, reduced level of consciousness, deep voice and pale cold skin.

Here we are presenting a patient with myxedema coma who was managed in the ward.

### Discussion:

Physicians should have a low index of suspicion on diagnosis of hypothyroidism as presentation and clinical features could be quite subtle with nonspecific overlapping symptoms and signs. A careful, detailed history taking and examination helps to consider myxedema coma as differential diagnosis leading to request thyroid function test and starting treatment, which should be started as early as possible.

Deficiency of T3 intracellularly leads to hypothermia, respiratory depression and cardiogenic shock.

The factors predisposing to myxedema coma are infection, hypothermia, hypoglycemia, gastro intestinal hemorrhage and medications.

The significant factors predicting the mortality are hypotension, bradycardia, sepsis, sedative drugs, low gcs score, SOFA of 6 or more (sequential organ failure assessment).

The treatment consists of HDU/ITU treatment with central venous pressure monitoring, fluid management in order to correct the electrolyte imbalance and hypotension, treating the underlying infection, thyroid hormone replacement, steroids and rewarming.

It is also advisable to give intravenous steroid as undiagnosed adrenal insufficiency may co exist. Thyroid hormone replacement also increases the cortisol clearance from the body.

### Conclusion:

The incidence of myxedema coma in European countries is about 0.22 million per year. Though its less common it's a life threatening condition which needs to be diagnosed and treated early. Delay in diagnosis affects the prognosis.

Its more common in elderly and women, sepsis is a major comorbidity and cause of mortality.

The outcome was not influenced by the route of administration of thyroxine or etiology of hypothyroidism (primary / secondary).

Myxedema coma has high mortality if not treated promptly. Although patient should be managed in an intensive care unit settings ideally, supportive measures are of paramount importance in the treatment of life threatening illness.