Case report

An endocrine cause of stupor after myocardial infarction

A 68-year-old woman presented with stupor (Glasgow coma score 11/15), severe sinus bradycardia (36 beats/minute) and bradypnoea (6 breaths/minute), after being bed-bound for a prolonged period owing to extreme lethargy. She was taking 200 mg amiodarone twice daily. The amiodarone had been initiated 9 months previously for arrhythmia control post-myocardial infarction.

General examination revealed coarsened facies, hoarseness and central obesity. Thyroid-stimulating hormone was un-recordably high. Free T3 was 0.7 pmol/l. Free T4 was 3.7 pmol/l. Baseline thyroid function had not been tested. A diagnosis of severe amiodarone-induced hypothyroidism was inferred.

Renal function initially deteriorated rapidly and pyelonephritis became unmasked, resolving on antibiotics. With amiodarone discontinuation and cautious thyroid replacement, the patient regained functional independence for the first time in four months.

Discussion

Because of its iodide-containing moiety, amiodarone can induce either thyrotoxicosis (Jod-Basedow mechanism) or hypothyroidism (Wolff-Chaikoff mechanism).[1] Local data suggest a trend to the inevitability of developing thyroid disease the longer a patient is on amiodarone.[2]

This case illustrates several important clinical points:

- Maintenance dosing of amiodarone is usually 200 mg once daily or less.[3]
- Amiodarone's half-life is extremely long (up to 4 months);[3] toxicity cannot rapidly be reversed.
- It is imperative to know the free T3 level in amiodarone-induced thyroid disease.
- Thyroxine and tri-iodothyronine replacement in severe hypothyroidism must be cautious; overzealous therapy precipitates pulmonary oedema, myocardial infarction and arrhythmias.[4]
- Sepsis in myxoedema is often occult and causes mortality.[5]
- Thyroid function testing before and during amiodarone therapy is mandatory.

Amiodarone therapy guidelines for South Africa are currently being developed and should be available in the near future.

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SINGLE SUTURE

Older fathers pass on more mutations

Planning to put off parenting? You might want to consider this: a man's sperm collects mutations at a rate of two per year. While there may be perks to gaining some of those new mutations, others may be behind conditions like schizophrenia.

New sperm cells are continually created in the testes from a store of stem cells. These stem cells multiply by making copies of their DNA, but mistakes can occur during this process, forming mutations. 'These mutations are not necessarily deleterious,' says Anne Goriely at the University of Oxford. 'They're essential for a species to evolve.'

To find out how many mutations accumulate with age, Kári Stefánsson and his colleagues at Decode Genetics in Reykjavik, Iceland, sequenced the genomes of people with schizophrenia and autism, and compared them with the genomes of their parents, who did not have the conditions. Both conditions are thought to be linked to new mutations, says Goriely.

The approach allowed Stefánsson's team to tell in which parent the mutations that contribute to the conditions had originated. They found that most new mutations were inherited from the father, and the number of them appeared to correlate with his age: about two new mutations occurred for every year older the father was when the child was conceived (*Nature* [http://dx.doi.org/ 10.1038/nature11396]).

The rate confirms what reproductive scientists predicted, says Goriely, who wasn't involved in the study. But although parents-to-be should be advised on how their age may affect the health of their offspring, the finding doesn't mean that all older fathers risk passing on damaging mutations. 'Some mutations may be related to disease, but some may be beneficial, and some are likely to have no effect,' says Goriely.

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