The problem with modern endocrinology

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Improved doctor–patient communications and more research are necessary

The problem with endocrinology is that patients and doctors sometimes talk a different language. This is because there are many areas of uncertainty. How aggressively should the management of diabetes or osteoporosis be pursued? Should borderline thyroid function tests or testosterone be treated? What is the best diet for a patient with type 2 diabetes?

A patient with diabetes wants to know if he is going to die young, go blind or end up on dialysis. The doctor tells him that his glycated haemoglobin and LDL cholesterol levels are slightly elevated at 7.2% and 2.1 mmol/L, respectively, and his blood pressure is healthy. A patient with osteoporosis on treatment wants to know if her bones are getting healthier. The doctor says her bone mineral density is increasing. A patient with abnormal thyroid function test results or a slightly low testosterone level wants to know if this indicates illness and needs treatment. The doctor says she does not know but offers hormone replacement because it seems logical, is quick and is often what the patient wants.

Modern research often uses surrogate endpoints because the real outcomes are very hard to measure. Are we fixing the blood tests but not the patient? We are trying to do better. New studies in diabetes look at cardiovascular outcome and sometimes even cardiovascular mortality or overall mortality. Bone research has for years now investigated clinically significant fractures rather than just bone mineral density.

This issue of the *MJA* tackles these issues in four major areas of endocrinology: diabetes, osteoporosis, thyroid disease and male hypogonadism. It is likely these diseases involve half the population over 50 years of age.

In diabetes, new studies look at cardiovascular outcomes, time to dialysis or transplant, and sometimes overall mortality. New treatments include new drugs as well as new approaches to patient management. To keep up to date, we can read studies that describe real endpoints not surrogates. A cure for either type 1 or type 2 diabetes seems as far away as ever but treatments and outcomes continue to improve. However, this has not stopped the recurrent admission to hospital of patients with diabetes. Better general practice systems for managing patients with chronic disease are required to prevent the merry-go-round of recurrent emergency department visits and hospitalisation of patients with diabetes.[1] Behavioural innovation is crucial to improving the health of a million Australians living with type 2 diabetes.[2]

One of the biggest communication challenges in diabetes management is what to advise the patient about the best diet. This remains unclear — most studies are short term with small numbers. How do we choose among options such as the CSIRO, Mediterranean, low fat, low carb and Paleo diets? In this issue, Andrikopoulos assists by discussing diabetes and the Paleo diet.[3] Most recommendations still suggest a low joule, low fat, high complex carbohydrate diet.

In osteoporosis management, the problem is different. How to get the patients to take drugs with proven efficacy but with very rare, but frightening side effects? The currently available bisphosphonates and denosumab reduce fractures by up to 50% but 1 in 100 000 patients will experience dead bone in the mouth (osteonecrosis of the jaw) or an atypical femoral fracture, with the bone suddenly giving way.[4] For the doctor, the risk–benefit equation obviously favours treatment. Not so for the patient. We need to improve our communication on this issue.

The management of thyroid disease seems straightforward enough — anti-thyroid drugs for hyperthyroidism and thyroxine replacement therapy for hypothyroidism. But what about patients with either high or low levels of thyroid-stimulating hormone but with normal thyroxine and triiodothyronine levels? Does treatment fix the blood test or the patient? Unfortunately, it is still not clear but the narrative review by Walsh in this issue suggests a practical approach.[5] Five per cent of the population have a thyroid nodule. The patient just wants to know whether it is cancer and if they will die of it. Multiple ultrasounds and fine needle biopsies later, the doctor reassures the patient and says "we will watch it". Frequently, surgical resection reveals benign disease. Better diagnostic pathways are required.

Last, what about communication in the field of men's health. Low testosterone seems to be a straightforward problem easily solved by testosterone replacement. It is a quick consultation and the patient gets what he wants — patient, doctor and pharmaceutical company are happy. But is it good medicine? Alas no. It takes time to explain that the low testosterone measurements are not a disease and that the likely cause of the symptoms often lies elsewhere. The Endocrine Society of Australia position statement in this issue helps define the problems and suggests a decision making strategy.[6]

The answers to many of these challenges lie in two approaches — better communication at the clinical level and more research, both basic and clinical.

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1 Newlyn N, McGrath RT, Fulcher GR. Evaluation of the performance and outcomes for the first year of a diabetes rapid access clinic. *Med J Aust* 2016; 205: 172.

2 Speight J. Behavioural innovation is key to improving the health of one million Australians living with type 2 diabetes. *Med J Aust* 2016; 205: 149-151.

3 Andrikopoulos S. The Paleo diet and diabetes. *Med J Aust* 2016; 205: 151-152.

4 Milat F, Ebeling PR. Osteoporosis treatment: a missed opportunity. *Med J Aust* 2016; 205: 185-190.

5 Walsh JP. Managing thyroid disease in general practice. *Med J Aust* 2016; 205: 179-184.

6 Yeap BB, Grossman M, McLachlan RI, et al. Endocrine Society of Australia position statement on male hypogonadism (part 1): assessment and indications for testosterone therapy. *Med J Aust* 2016; 205: 173-178. ■

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