



## Discovering familial hypercholesterolaemia

**To the Editor:** We are concerned that patients with monogenic dyslipidaemias may be denied effective treatment for their high-risk condition by some questionnaires used by the medical schemes industry.

Familial hypercholesterolaemia (FH) is highly prevalent in South Africa owing to the presence of founder effects in several populations.<sup>1</sup> If it is left untreated, markedly premature atherosclerosis is the usual outcome. Algorithms that estimate the 10-year risk of cardiovascular events (e.g. Framingham study-based charts) usually grossly underestimate actual risk in FH. Guidelines therefore recommend that patients with FH should not be risk-scored.<sup>2</sup> Chronic medication application forms therefore need to make provision for the diagnosis of FH in addition to collecting data for risk estimation.

The definitive diagnosis of FH can be difficult. Not all patients display the characteristic tendon xanthomata, and

the family history is not always available and does not always reveal premature heart disease. Genetic tests are not the answer as there are more than 1 000 described mutations in the low-density lipoprotein (LDL)-receptor gene, and this is not the only gene associated with the phenotype. Medication application forms attempt to capture these complexities in one or two lines. This is often not done effectively, as in the current Discovery Health form.<sup>3</sup>

Doctors are asked to indicate whether there are signs of familial hyperlipidaemia. The options presented are xanthelasma, cerebrotendinous xanthomatosis and arcus cornealis. None of these aids in the diagnosis of FH. Xanthelasma are a poor sign of raised cholesterol, and arcus cornealis is similarly nonspecific. Cerebrotendinous xanthomatosis (CTX) is a very rare autosomal recessive abnormality of bile acid metabolism that results in cataracts, neurological dysfunction and tendon xanthomata.<sup>4</sup> CTX and FH share tendon xanthomata as a cardinal physical sign but are otherwise very different conditions.

This leaves plasma lipids and a limited family history table as data on which to base funding decisions. These decisions risk being inappropriate with potentially severe consequences, and reversing them is often time-consuming. Other medical funders require FH to be diagnosed by endocrinologists. FH is a common disorder that should be diagnosed by general practitioners with backup, as needed, from a specialist or a lipid clinic.<sup>5</sup> The diagnosis of FH should be entrusted to medical practitioners and not medical schemes.

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1. Firth J, Marais AD. Familial hypercholesterolaemia: the Cape Town experience. *S Afr Med J* 2008; 98(2): 99-104.
2. Raal FJ, Marais AD, Schamroth C. Adoption of the European Guidelines on cardiovascular disease prevention in clinical practice – guide to lipid management. *SA Heart Journal* 2006; 3 (Supplement).
3. Discovery Health Chronic Illness Benefit Application Form CIBE 11/07. [www.discovery.co.za](http://www.discovery.co.za) (accessed 5 March 2008).
4. Gallus GN, Dotti MT, Federico A. Clinical and molecular diagnosis of cerebrotendinous xanthomatosis with a review of the mutations in the CYP27A1 gene. *Neurol Sci* 2006; 27(2): 143-149.
5. Marais AD. Lipidology: adding value to tertiary services. *S Afr Med J* 2008; 98(2): 91-92.