



Issue No. 68 May 2014

THE PITUITARY CONNECTION

NEWSLETTER OF THE AUSTRALIAN PITUITARY FOUNDATION LTD

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MISSION STATEMENT

The APF's mission is to provide support to those who have experienced pituitary gland conditions. We promote awareness and disseminate information helpful to the medical community, public, pituitary patients and their families.

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FEATURE ARTICLE -

Effect of Hydrocortisone Dose on Risk of Diabetes and Heart Disease

Dr Carolyn Petersons, Endocrinologist and Physician (General Medicine Unit), The Canberra Hospital.

Long-term glucocorticoids (steroids) are taken by nearly 1 % of the general population. A large number of patients with pituitary conditions need to take glucocorticoid replacement, as they are unable to produce sufficient cortisol to meet the body's requirements. As was recently explained in the December edition of this newsletter, people taking glucocorticoid replacement for hypopituitarism often end up taking higher doses of glucocorticoid than the body would usually make, due to the way the tablets work in the body. Examples of glucocorticoid replacement medications taken by patients with hypopituitarism include hydrocortisone (hysone), cortisone acetate (cortate), prednisolone (panafocortelone, predsolone, or solone), and dexamethasone (dexmethasone).

Studies have shown that patients with hypopituitarism have increased rates of mortality from heart disease compared with the general population. The underlying cause of this is unclear, and is thought to be due to a combination of a number of factors. Recent data have suggested that higher glucocorticoid doses may be a contributing reason for this increased rate of heart disease in patients with hypopituitarism, in particular at daily hydrocortisone-equivalent doses of 30 mg and higher.

The mechanism by which glucocorticoids increase risk of heart disease is uncertain. As part of my PhD, I undertook a study which aimed to explore possible mechanisms that could contribute to the association between higher glucocorticoid doses and the increased rates of cardiovascular mortality in patients with hypopituitarism. Assistance with recruitment for this study was generously provided by the Australian Pituitary Foundation. This study has recently been accepted for publication in the Journal of

Clinical Endocrinology and Metabolism.

The study was conducted in the Endocrine Research Unit at the Repatriation General Hospital, Adelaide, between 2011-2013, under the supervision of Dr Morton Burt. We studied 17 patients usually taking hydrocortisone-equivalent doses of no more than 20 mg per day. We performed a number of tests on the patients while they were taking their usual glucocorticoid dose, and then repeated the same investigations after we had increased their daily dose of hydrocortisone to 30 mg for one week. The study was designed to demonstrate whether the higher glucocorticoid replacement dose of 30 mg would worsen risk markers of heart disease.

One test which we performed assessed how sensitive the body is to insulin. The body's sensitivity to insulin plays an important role in controlling blood sugar levels, and when it is reduced is a significant contributing factor for the development of diabetes. It is known that glucocorticoid medications can increase blood sugar levels, in particular after meals. Patients with diabetes, in particular those with elevated blood sugar levels after a meal, are at increased risk of heart disease. We thus assessed whether a short-term increase in glucocorticoid replacement dose altered insulin sensitivity in patients with hypopituitarism. In our study, we did not demonstrate a change in insulin sensitivity with the

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is produced with the generous support of



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As part of the special services provided by the APF, healthcare specialists and others contribute articles and commentaries covering the latest thinking on a wide variety of topics.

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<p>Patient Story - Panhypopituitarism NL 39 - Feb 07</p>	<p>Steroid Therapy NL 46 - Nov 08</p>
<p>The Clinical Picture of Hypopituitarism in Children NL 52 - May 10</p>	<p>Making Sense of Brain Tumour Speaking with Your Neurosurgeon The Role of the Paediatric Neuropsychologist NL 57 - Aug 11</p>