



Use of Dessicated Thyroid Extracts: Time to Beef up the Evidence?

Parijat De*

City Hospital (SWBHT), University of Birmingham, Birmingham B15 2TT, UK

*Corresponding author: Parijat De, Clinical Lead, Diabetes, Endocrinology and Honorary Senior Clinical Lecturer, City Hospital (SWBHT), University of Birmingham, Birmingham B15 2TT, UK, Tel: 01215074104; E-mail: p.de@nhs.net

Received date: Aug 22, 2017; Accepted date: Aug 23, 2017; Published date: Aug 29, 2017

Citation: Parijat De (2017) Use of Dessicated Thyroid Extracts: Time to Beef up the Evidence?. Rep Thyroid Res 1: e002.

Copyright: © 2017 Parijat De. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

Editorial

Levothyroxine (T4) is the commonest treatment used to treat hypothyroidism to render patients clinically and biochemically euthyroid as recommended by the Royal College of Physicians [1] in the UK and many other guidelines. Whereas levothyroxine has a long half-life of one week, most liothyroxine (T3) is generated from deiodinisation of circulating T4 - so in principle treatment with levothyroxine (T4) should provide enough T3 in physiological concentrations.

Although routine use of thyroid extract is not recommended by the Royal College of Physicians, the British Thyroid Association and the European Thyroid Association, practicing endocrinologists do encounter patients in clinical practice who do not seem to respond to levothyroxine.

Desiccated thyroid extracts are not licensed in the UK and although available in the US, they have not been approved by the US FDA due to lack of vigorous clinical trials evaluating clinical efficacy and safety. Desiccated thyroid extracts like Armour thyroid, NP thyroid and Nature Throid are derived from porcine thyroid glands and generally contain 38 mcg of T4 and 9 mcg of T3 per 65 mg of labelled thyroid gland [2-4]. Apart from the problem of not being licenced, there is also lack of consistent effect with these treatments. In addition, there do not seem to be enough randomised clinical trials about their long-term outcomes. To the contrary, there is thought to be an excessive risk of supra-physiological T3 levels during therapy with natural thyroid extracts causing symptoms including development of osteoporosis and arrhythmia [1,5-7]. Despite all these issues, there are a minority of patients who are not content with T4 therapy and request treatment with alternate treatment strategies including desiccated thyroid as they do not feel well on T4 treatment.

Given this dichotomy between the need in some patients for alternative treatment and at the same time lack of clear cut evidence with such treatments, is it not time to think of designing proper randomised control studies comparing synthetic levothyroxine with natural desiccated thyroid extracts? Over the years there have only been a few studies in this area with good quality evidence to support or refute the use of desiccated thyroid extract.

Studies have not only been few and far between but also vary in design, duration, size and outcomes. As far as we know, there is only one small randomised control cross over trial comparing the two treatments over a period of 16 weeks which showed no difference in general health in all patients evaluated with normal TSH levels. Patients who preferred desiccated thyroid (49%) tended to have greater weight loss and subjective improvement in symptoms of energy levels, memory and concentration [8]. Although it is difficult to generalise the benefits of desiccated thyroid treatment over levothyroxine, it is also

possible that there may be subtle improvements seen in some patients as noted in clinical practice from time to time. A study with proper sample size, longer duration with comparable groups is clinically required to clarify the efficacy and safety of desiccated thyroid extract.

There have also been a couple of retrospective reviews of desiccated thyroid showing improvement in symptoms but again there are questions about dose titration of thyroxine prior to switching to desiccated thyroid and also selection bias in these two studies [5,9,10].

Practising clinicians need to be absolutely sure where they stand with regards to prescribing desiccated thyroid extract given the fact that patients are much more aware of treatment strategies and do search the internet a lot more these days. As clinicians we also need to be able to provide them with robust evidence based answers that will help them both physically and psychologically adapt to treatments as recommended by most organisations.

References

1. Royal College Physicians (2011) The diagnosis and management of primary hypothyroidism. http://www.rcplondon.ac.uk/sites/default/files/the-diagnosis-and-management-of-primary-hypothyroidism-revised-statement-14-june-2011_2.pdf Accessed 08/01/2016.
2. Forest Pharmaceuticals, Inc (2016) Armour thyroid (thyroid tablets, USP) http://pi.actavis.com/data_stream.asp?product_group=1924&p=pi&language=E Accessed 08/01/2016.
3. Acella Pharmaceuticals, LLC (2016) NP Thyroid (thyroid tablets, USP) <http://www.npthyroid.com/assets/ace-15666-pi.pdf> Accessed 08/01/2016.
4. RLC (Labs 2016) Nature-Thyroid (thyroid USP) tablets <http://getrealthyroid.com/wp-content/uploads/2014/11/Nature-Thyroid-Prescribing-Information.pdf> Accessed 19/2/16.
5. Jackson IM, Cobb WE (1978) Why does anyone still use desiccated thyroxine USP? *Am J Med* 64: 284-288.
6. Wiersinga WM, Duntas L, Fadeyev V, Nygaard B, Vanderpump MP (2012) ETA Guidelines: The Use of L-T4 + L-T3 in the Treatment of Hypothyroidism *Eur Thyroid J* 1: 55-71.
7. Okosieme O, Gilbert J, Abraham P, Boelaert K, Dayan C, et al. (2016) Management of primary hypothyroidism: statement by the British Thyroid Association Executive Committee *Clin Endocrinol (Oxf)* 84: 799-808.
8. Hoang TD, Olsen CH, Mai VQ, Clyde PW, Shakir MK, et al. (2013) Desiccated thyroid extract compared with levothyroxine in the treatment of hypothyroidism: a randomized, double-blind, crossover study *J Clin Endocrinol Metab* 98: 1982-1990.
9. Baisier WV, Hertoghe J, Eeckhaut W (1997) Thyroid insufficiency. Is thyroxine the only valuable drug? *J Nutr Environ Med* 11: 159-166.
10. Pepper GM, Casanova-Romero PY (2014) Conversion to Armour Thyroid from Levothyroxine Improved Patient Satisfaction in the Treatment of Hypothyroidism *J Endocrinol Diabetes Obes* 2: 1055.