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Adrenalectomy improves glycemic and thermogenic responses in congenic Obese LA/Ntvl/-cp RATS**Orien L. Tulp***University of Science Arts and Technology, United Kingdom*

To determine the effects of adrenalectomy on typical insulin-mediated metabolic responses in obese rats, groups (n=6 -12 rats/phenotype) of normally reared congenic lean and obese animals were fed a Purina chow diet from 6 to 9 weeks of age, and the Chow diet [plus a highly palatable cafeteria diet from 9 to 12 weeks of age. Subgroups of obese animals were subjected to bilateral adrenalectomy (ADX) at 6 weeks of age. Measures of glucose tolerance (OGT) were obtained in the 3 treatment groups at 6, 9 and 12 weeks of age, and of noradrenaline-stimulated (NE) thermogenesis (VO₂, 200 mcg, s.c.) at 12 weeks of age. OGT responses after 30 to 60 minutes and the Insulin to glucose ratio were impaired but not diabetic in obese animals at all ages compared to lean littermates. ADX resulted in normalization of OGT in the obese phenotype at 9 and 12 weeks of age. Resting VO₂ was greater in lean than in obese at 12 weeks of age. NE-stimulated thermogenesis (200 ug, s.c.) responses of obese rats were decreased, and ADX resulted in normalization of the thermic response to NE. These results are consistent with normalization of typical insulin-mediated components of glycemic parameters and thermogenesis following adrenalectomy of obese rats demonstrating moderate insulin resistance and suggest that counterregulatory effects of insulin and adrenal glucocorticoid hormones may be contributory to the impaired glycemic and thermic responses in the obese phenotype of the LA/Ntvl/-cp (corpulent) rat, and may be a contributory element in the epigenetic expression and further development of obesity in this congenic rodent strain.

Biography

Orien Tulp is Professor and President of the University of Science Arts and Technology, Montserrat, British West Indies. He is an accomplished investigator and author of over 500 manuscripts book chapters and abstracts primarily in the areas of nutrition, endocrinology and metabolism, with secondary interests in infectious diseases