IGF-I which could be released by endothelial cells and act in an auto-/paracrine manner [11]. In conclusion, it is of particular importance to view apoptosis in line with other known biological effects of proinsulin such as the stimulation of cell proliferation and PAI-1 activity and to compare the effects of proinsulin with those of structurally related peptides (e. g. insulin and IGF-I). It is essential to further elucidate the molecular mechanism by which proinsulin acts to understand its physiological and pathophysiological role.

Yours sincerely,
M. Faehling, R. D. Fussgaenger, P. M. Jehle

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Capsaicin-induced sensory denervation increases glucose elimination in rodents

Dear Sir,
It is well known that adrenergic (sympathetic) and cholinergic (parasympathetic) nerves are of importance for islet hormone secretion and glucose homeostasis [1–3]. In contrast, the involvement of the sensory nerves in the regulation of glucose homeostasis has not been established, which could be partially ascribed to lack of good and reliable experimental methods to study this topic. One useful technique, however, is treating neonatal animals with capsaicin, which results in permanent destruction of sensory nerves [4, 5].

In the July 1998 issue of Diabetologia, Dr Koopmans and collaborators reported a study in neonatally capsaicin-treated rats [6]. They found that capsaicin-treated animals developed increased insulin sensitivity as judged by euglycaemic clamp studies in the adult rats and based on these observations they suggested that sensory nerves are involved in glucose metabolism by reducing insulin sensitivity and thereby inhibiting glucose elimination. In the article, the authors state that "only one previous study has examined the involvement of capsaicin-sensitive sensory nerves in the regulation of glucose homeostasis" and they then refered to the important work by Zhou and collaborators, showing failure of normal recovery from insulin-induced hypoglycaemia after capsaicin in rats [7]. The statement that this is the only study examining the influence of capsaicin-induced sensory denervation on glucose homeostasis is not correct, however, since a growing body of evidence in the literature has already arrived at the same conclusion, i. e. that increased glucose elimination is seen after neonatal capsaicin treatment. For example, we have shown previously that giving capsaicin to neonatal mice increases glucose elimination following an i. v. glucose tolerance test in adulthood [8]. More importantly, Guillot and collaborators have, likewise in rats of the same species as studied by Dr Koopmans and collaborators, shown that capsaicin increases glucose elimination by an action independent of insulin secretion [9]. Therefore, the work by Dr Koopmans and collaborators [6] supports the previously stated suggestion [5, 7, 9] that sensory nerves are of importance for glucose metabolism and they provide evidence that this is due to an action on insulin sensitivity. It is now important to delineate in detail the mechanism of such an action.

Yours sincerely,
S. Karlsson, B. Ahrén

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