
Pharmacokinetics of L-Threo-DOPS in autonomic failure

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L-threo-3,4-dihydroxyphenylserine (L-DOPS), which is converted to norepinephrine (NE) like L-DOPA is converted to dopamine, increases standing blood pressure and improves standing ability in patients with neurogenic orthostatic hypotension. Goldstein et al. assessed the pharmacokinetics of L-DOPS, NE, and dihydroxyphenylglycol (DHPG), the main neuronal metabolite of NE, in patients with pure autonomic failure (PAF) or multiple system atrophy (MSA). Similar NE and DHPG responses in PAF and MSA suggested production of NE from L-DOPS mainly in non-neuronal cells, while persistent elevation of plasma NE in MSA suggested at least some release of neuronal NE is derived from L-DOPS.

In an accompanying editorial (page 356), Esler emphasizes that in patients with MSA, who have intact peripheral sympathetic neurons, substantial decarboxylation of L-DOPS to norepinephrine must occur within sympathetic nerves. This is suggested by the greater volume of distribution of L-DOPS in patients with MSA than in those with PAF, and the higher plasma levels of norepinephrine that were attained after taking L-DOPS in patients with MSA.

Sympathetic activity in normotensive subjects with family history of hypertension

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Maver et al. report that subjects with a family history of hypertension had altered baroreflex sensitivity and heart rate, systolic pressure and microvascular flow variability power spectra. These findings suggest that even when normotensive, subjects with a family history of hypertension had increased sympathetic activity to the heart.

In an accompanying editorial (page 358), Jordan reviews genetic factors in hypertension and emphasizes the need for sophisticated measurements of blood pressure regulation to identify different phenotypes.

Active standing and head-up tilt in the young

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In children and adolescents with orthostatic symptoms, Matsushima et al. found that active standing induced syncope more frequently than passive head-up-tilt.

In an accompanying editorial (page 360), Morillo et al. comment on the limitations of the study, namely the lack of randomization in the order of testing and extremely brief period of orthostatic stress, which was only seven minutes.

Heating and the venoarteriolar response

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In the study of Davison et al., engagement of the cutaneous venoarteriolar response (CVAR) resulted in typical decreases in skin blood flow at neutral and moderate skin temperatures. In contrast, high skin temperature, vasodilation during neutral temperature, and inhibition of vasodilation during high skin temperature all significantly attenuated the vasoconstrictor response of the CVAR. Therefore, CVAR is attenuated at high local skin temperature, and this attenuation is likely due to an effect of both local heating-induced vasodilation and a direct temperature effect.

Prematurity and parasympathetic activity

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Patural et al. report that premature infants studied at their theoretical full-term age had lower high frequency RR interval variability by wavelet transform analysis than full-term newborns. This may reflect lower parasympathetic cardiac activity in premature babies.

Unilateral nostril breathing and tonic accommodation

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Breathing through one nostril increases the electroencephalographic activity and causes contralateral hemispheric stimulation of the brain. It is reported to affect pupil size. However, Chen et al. found no significant effect of this maneuver on tonic pupillary accommodation.

Sympathetic skin response in diabetic neuropathy

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Idiaquez et al. found that the amplitude of the sympathetic skin response in the plantar surface of the foot was lower only in patients with disabling neuropathy,

whereas the amplitude of response in the big toe was reduced in patients with mild neuropathy. In severe neuropathy, sympathetic skin response in the big toe was not measurable while it still persisted in the plantar surface. The authors conclude that sympathetic skin response in the big toe may be more sensitive in detecting distal sudomotor failure in patients with diabetic neuropathy.

Acarbose and postprandial hypotension in diabetes mellitus

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Maule et al. report the successful treatment of severely symptomatic postprandial hypotension in a patient

with type 1 diabetes mellitus with acarbose. Both glycemic control and postprandial hypotension improved.

Aging and QT dispersion

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Esen et al. report that elderly subjects, particularly those over the age of 75, had higher QT dispersion than younger subjects. The authors suggest that this may be a predictor of malignant arrhythmias and sudden death in the elderly.