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Limaprost
A Viewpoint by Shin-Ichi Konno

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Prostaglandin E_1 (PGE_1) clathrate compounds were developed as antiplatelet drugs: alprostadil alfadex for injection (1979) and limaprost alfadex for oral use (1988). PGE_1 is both a vasodilator and an inhibitor of platelet aggregation, and has been widely used in the treatment of peripheral vascular disease in Japan. Intermittent claudication due to lumbar spinal canal stenosis (LSCS) is very likely to account in part for the development of symptoms of reversible functional impairment caused by a relative ischaemic state of the cauda equina. Based on these findings, it would be reasonable to consider that reversal of compression-induced decreased blood flow in the cauda equina may be effective in improving symptoms due to LSCS. Limaprost has been proven to have an antithrombocytic effect, an effect of improving vascular endothelial function and a vasodilating effect, so it is considered to be efficacious in LSCS.

Because PGE_1 is rapidly inactivated in the lungs, large doses are needed; this can lead to hypotension, diarrhoea and local irritation. To avoid this, lipo-PGE_1 was developed. Clinical studies have demonstrated that lipo-PGE_1 is more effective and safer than conventional free PGE_1 in the treatment of peripheral vascular disease. However, oral limaprost overcomes the safety concerns of an intravenous infusion. Most patients would prefer to avoid an infusion as first-line therapy. Oral limaprost 3–30 μg/day was generally well tolerated in clinical trials. Larger studies that use a double-blind, randomised, controlled design are needed to evaluate the efficacy of limaprost for treatment of LSCS and peripheral vascular disease, with assessments of patient-based outcomes using instruments such as the Roland-Morris disability questionnaire and the Short-Form 36. ▲