



This review describes the current understanding of the pathogenesis of arteriovenous fistula and graft failure, the biological effects of antiplatelet agents, fish oil supplementation, RAAS blockers and statins that may be beneficial in improving vascular access survival, results from clinical trials that have investigated the effect of these agents on arteriovenous fistula and graft outcomes, and it explores future therapeutic approaches combining these agents with novel treatment strategies” Viecelli et al (2017).

Abstract:

In patients receiving hemodialysis, the provision of safe and effective vascular access using an arteriovenous fistula or graft is regarded as a critical priority by patients and health professionals. Vascular access failure is associated with morbidity and mortality, such that strategies to prevent these outcomes are essential. Inadequate vascular remodeling and neointimal hyperplasia resulting in stenosis and frequently thrombosis are critical to the pathogenesis of access failure. Systemic medical therapies with pleiotropic effects including antiplatelet agents, omega-3 polyunsaturated fatty acids (fish oils), statins, and inhibitors of the renin-angiotensin-aldosterone system (RAAS) may reduce vascular access failure by promoting vascular access maturation and reducing stenosis and thrombosis through

antiproliferative, antiaggregatory, anti-inflammatory and vasodilatory effects. Despite such promise, the results of retrospective analyses and randomized controlled trials of these agents on arteriovenous fistula and graft outcomes have been mixed. This review describes the current understanding of the pathogenesis of arteriovenous fistula and graft failure, the biological effects of antiplatelet agents, fish oil supplementation, RAAS blockers and statins that may be beneficial in improving vascular access survival, results from clinical trials that have investigated the effect of these agents on arteriovenous fistula and graft outcomes, and it explores future therapeutic approaches combining these agents with novel treatment strategies.

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Reference:

Viecelli, A.K., Mori, T.A., Roy-Chaudhury, P., Polkinghorne, K.R., Hawley, C.M., Johnson, D.W., Pascoe, E.M. and Irish, A.B. (2017) The pathogenesis of hemodialysis vascular access failure and systemic therapies for its prevention: Optimism unfulfilled. *Seminars in Dialysis*. November 26th. .

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