

## **Advanced Fistuloplasty**

**Keerati Hongsakul**

*Prince of Songkla University, Thailand*

Dialysis access is an important part in the daily life of hemodialysis patients. Significant stenosis or thrombosis is a major cause of dialysis dysfunction. The most common stenotic site of AVG and AVF are venous anastomosis and juxta-anastomosis, respectively. Intimal hyperplasia is a major cause of stenosis.

Endovascular treatment with balloon angioplasty is the first line option. The recommendation of the DOQI guideline (2006) for angioplasty should be a 50% patency rate at 6 months based on less than 30% residual stenosis. Several articles reported 6- and 12-month primary patency rates ranging from 38% to 79% and 10% to 50%, respectively, using plain balloon angioplasty. However, in the case of resistant or refractory stenosis, the patency rate of plain balloon angioplasty decreases. Currently, there are many types of balloon devices for angioplasty in the case of resistant or refractory stenosis, including high pressure balloon, cutting balloon and paclitaxel-coated balloon. High pressure and cutting balloons have a benefit in cases of resistant stenosis that failed angioplasty with plain balloon. However, some articles reported that the primary patency of the target lesion was not significantly better than plain balloon angioplasty. The reported 6-month patency of cutting balloon ranged from 30% to 66%.

Paclitaxel-coated balloon has proved to provide good outcomes with significant reduction in the stenotic rate of peripheral arterial disease. Additionally, a recent randomized controlled clinical trial showed good outcomes from drug-coated balloon for stenoses in dialysis access. The 6-month target lesion primary patency rate was 70%. Other recent non-randomized studies also reported good outcomes of a drug-coated balloon for the treatment of in-stent stenosis in dialysis fistula, in which the freedom from target lesion revascularization was 69%.

In summary, endovascular treatment with balloon angioplasty is the first option for treatment. In the case of resistant or early re-stenosis or both in dialysis access, the advanced devices have proven to improve the outcome.