CARDIOVASCULAR DISEASE (CVD) is the major cause of death after kidney transplantation (KTx). Everolimus (EVR) is an immunosuppressive agent now widely used in KTx that is also known for its anti-atherosclerotic effect. The Ankle–Brachial Index (ABI), Carotid Artery Intima–Media Thickness (IMT), and Carotid Arterial Wall Thickness (CAW) provide indicators of atherosclerosis and are utilized as surrogate CVD markers in many diseases such as chronic kidney disease and diabetes. In this study, we explored the potential anti-atherosclerotic effect of EVR in KTx by sequentially assessing the ABI, IMT, and CAVI.

### Materials and Methods
This study included 107 patients who recently underwent KTx with triple immunosuppression therapy consisting of calcineurin inhibitor (CNI, either tacrolimus or cyclosporine), mycophenolate mofetil, and mycophenolic acid. Three months after KTx, EVR was added in 52 patients (EVR+ group), and 55 patients remained on conventional CNI-based immunosuppression therapy without EVR (EVR- group). The ABI, IMT (mm), and CAVI were examined 3 months and 1 year after KTx, and the mean of the right and left values of each test were regarded as an index of atherosclerosis. The changes in the values of each test from 3 months to 1 year were compared between the EVRx and EVRx- groups as well as other clinical parameters.

### Results
Overall, the mean ABI, IMT, and CAVI 3 months and 1 year after KTx were 1.125 ± 0.087 (n=107) and 1.137 ± 0.091 (n=100), 0.650 ± 0.199 (n=107) and 0.633 ± 0.310 (n=92), and 7.597 ± 1.348 (n=70) and 7.493 ± 1.623 (n=63), respectively, with no significant differences among 3 months to 1 year were observed in each test. The changes in the ABI, IMT, and CAVI in the EVRx+ vs. EVRx- groups were 0.044 ± 0.093 vs. -0.011 ± 0.087 (p=0.003), 0.022 ± 0.127 vs. 0.033 ± 0.361, and 0.023 ± 1.487 vs. -0.173 ± 1.332, respectively. The ABI in the EVRx group showed a significant reduction from 3 months to 1 year that in the EVRx- group. Furthermore, EVRx non-use, high total cholesterol 3 months after KTx, and cyclosporine use were revealed as prognostic factors for a reduction in the ABI; however, the only independent prognostic factor determined in multivariate analysis was high total cholesterol 3 months after KTx.

### Conclusions
The results suggest that the early addition of EVR may prevent atherosclerosis progression after KTx. Further studies in more patients with a longer observation period may provide evidence of the anti-atherosclerotic effect of EVR.

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**Materials and Methods**

**Patients selection**
- 107 patients who recently underwent KTx with triple immunosuppression therapy consisting of calcineurin inhibitor (CNI, either tacrolimus or cyclosporine), mycophenolate mofetil, and mycophenolic acid.
- Three months after KTx, EVR was added in 52 patients (EVR+ group).
- 55 patients remained on conventional CNI-based immunosuppression therapy without EVR (EVR- group).

**Clinical analysis**
- **Patient characteristics**
  - **ABI**
    - EVR group: n=52, n=50, p=0.80
    - EVR group: n=50, n=48, p=0.83
  - **IMT**
    - EVR group: n=52, n=50, p=0.69
    - EVR group: n=50, n=48, p=0.69
  - **CAVI**
    - EVR group: n=52, n=50, p=0.27
    - EVR group: n=50, n=48, p=0.27

**Risk factors for atherosclerosis (ABI deterioration)**
- **Sex (female vs male)**
  - Odds ratio: 0.64
  - 95% CI: 0.27–1.52
  - P-value: 0.41
- **Recipient age (year)**
  - Significant
- **Donor age (year)**
  - Significant
- **BMI (kg/m2)**
  - Significant
- **Causes of ESRD (Non-CNI vs CNI)**
  - Significant
- **Systolic blood pressure (mmHg)**
  - Significant
- **HbA1c (mmol/L)**
  - Significant
- **Use of IFX, TAC, or EVR**
  - Significant