The Role of Intravenous N-Acetylcysteine Reduces Pulse Pressure in Patients with Chronic Kidney Disease Stage 5 during Hemodialysis. A Randomized Blinded Trial

**Abstrak:**

Background - Patients with chronic kidney disease have increased oxidative stress that cause endothelial dysfunction and show elevated pulse pressure. Whether increased pulse pressure can be prevented by the administration of antioxidants is unknown. Methods and Results — We evaluated the effect of N-acetylcysteine, a thiol-containing antioxidant, on pulse pressure in patients undergoing hemodialysis. A randomized, blinded trial was done in 60 patients (39 male and 21 female) with a mean age of 48.10 ± 11.08 years in N-acetylcysteine group and 52.60 ± 10.30 years in control group (p=0.338). They had been undergoing regular hemodialysis for 4 hours 2 times weekly in Hemodialysis Unit Dr. Soetomo Teaching Hospital, Surabaya. Patients were randomly assigned either to receive intravenous Nacetylcysteine (Hidonac 5 gram/25 ml solution) or placebo. The primary end point was a composite variable consisting of pulse pressure. A total of 30 (50%) of the 60 hemodialysis patients assigned to N-acetylcysteine group and 30 (50%) of the remaining patients assigned to control group. The significant differences in pulse pressure were detected before and after the intravenous N-acetylcysteine and also than control group. Conclusions: In hemodialysis patients, treatment with N-acetylcysteine (Hidonac 5 gram/25 ml solution) reduces pulse pressure.

**Keyword:**

antioxidants, N-acetylcysteine, pulse pressure

**Daftar Pustaka:**

Martyn CN, Greenwald SE Fetal origins of adult disease: a hypothesis about a mechanism for the programming of blood pressure and vascular disease in early life Clin and Exper Pharm and Physio 2001