

**EFFICACY OF HANP AND PDE III INHIBITOR COMBINATION THERAPY FOR RESTORING CARDIAC FUNCTION AND PROTECTING RENAL FUNCTION IN PATIENTS WITH SERIOUS HEART FAILURE COMPLICATED BY PLEURAL EFFUSION AND PERICARDIAL EFFUSION**

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**BACKGROUND/AIMS:** This study investigated the effects of administration of human atrial natriuretic peptide (hANP) and phosphodiesterase III inhibitor (PDE III-I) on the restoration of cardiac function and the protection of renal function in patients with serious heart failure .

**METHODS:** Subjects were 32 inpatients with serious heart failure complicated by pleural effusion (Ple). Patients were divided into 3 groups according to ejection fraction (EF) as determined by echocardiography: Group (Gr) A (n=6), in which EF was 50% or higher; Gr B (n=6), in which EF was lower than 50% but Ple rapidly resolved within 3 days after conventional treatment without hANP and PDE III-I; and Gr C (n=20), in which EF was lower than 50%, pericardial effusion was coexistent, and no marked decrease in Ple was noted 3 days after admission to the hospital. Patients in Gr C were treated with combined hANP and PDE III-I in addition to conventional treatment after diagnosis. In all groups, Ple was resolved finally. Cardiac function was assessed based on blood BNP levels. Renal function was assessed based on urinary  $\beta$ 2-microglobulin ( $\beta$ 2) levels.

**RESULTS:** A significant decrease in blood BNP levels was noted after treatment in Gr B and C (both:  $p > 0.01$ ). Urinary levels of  $\beta$ 2 after treatment were elevated in both Gr A and Gr B as compared with baseline values. However, in Gr C, there was a significant decrease in urinary levels of  $\beta$ 2 after treatment ( $p > 0.05$ ) as compared with baseline values.

**CONCLUSIONS:**

1) In patients with serious heart failure, hANP and PDE III-I combination therapy was effective in restoring cardiac function. 2) In order to restore cardiac function, protecting renal function may have a very important role. 3) Combined therapy with hANP and PDE III-I was also effective in protecting renal function in patients with serious heart failure.

**Keyword:** BNP  $\beta$  2 MG PERICARDIAL EFFUSION