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Metabolic Syndrome as a Predictor of Poor Clinical Outcome in the Paitents with STEMI

Department of Internal Medicine, School of Medicine, Pusan National University, Busan, Korea

*Young Joo Park, Han Cheol Lee, Hye Won Lee, Jin Sup Park, Jung Hyun Choi, Jun-Hyok Oh, Kwang Soo Cha, Taek Jong Hong

Background: The impact of metabolic syndrome (MS) on clinical outcome of acute myocardial infarction has remained unclear relationship. We investigated the impact of MS on the clinical outcomes in the ST elevation myocardial infarction (STEMI) and non STEMI (NSTEMI). **Methods:** From Korean acute myocardial infarction registry (KAMIR), we retrospectively reviewed the records of 11,247 patients. They were divided to STEMI and NSTEMI group and each group was divided to two sub-groups by the presence of MS. The primary endpoint was one year major adverse cardiovascular events (MACE) and the secondary end points were in-hospital death, stent thrombosis and each components of MACE. **Results:** The MS present groups in both STEMI and NSTEMI group were more likely to be young and male ($p<0.001$). Clinical outcomes were significantly worse in the MS present group than the MS absent in STEMI group; in-hospital death (4.1% vs. 2.8%, $p=0.006$), stent thrombosis (2.0% vs. 0.6%, $p=0.045$), 1 month MACE (7.6% vs. 5.6%, $p=0.003$), 6 month MACE (14.3% vs. 11.4%, $p=0.003$). However, MS present in NSTEMI group showed no significant differences of clinical outcomes compared with MS absent group. On multivariate Cox regression analysis, MS present in STEMI group shows higher incidence of one year MACE (HR 1.2, 95% CI 1.010-1.413, $p=0.050$). **Conclusions:** Based on KAMIR data, MS is related to MACE and is a predictor of poor clinical outcomes in STEMI. But, MS is not related to poor clinical outcomes in NSTEMI.

Table1. Clinical outcomes in STEMI group (%)

	MS present (n=2262)	*MS abscent (n=4494)*	*P value*
In-hospital death (%)	92(4.1)	126(2.8)	0.006
1 month MACE (%)	156(7.6)	227(5.6)	0.003
6 months MACE (%)	255(14.3)	398(11.4)	0.003
12 months MACE (%)	291(16.3)	505(14.4)	0.074
Stent thrombosis (%)	13(2.0)	3(0.6)	0.045

Table2. Clinical outcomes in NSTEMI group (%)

	MS present (n=1751)	*MS abscent (n=2740)*	*P value*
In-hospital death (%)	46(2.6)	70(2.6)	0.923
1 month MACE (%)	104(6.7)	151(6.3)	0.643
6 months MACE (%)	164(12.5)	254(12.2)	0.872
12 months MACE (%)	199(15.2)	299(14.4)	0.584
Stent thrombosis (%)	3(0.6)	8(1.0)	0.545

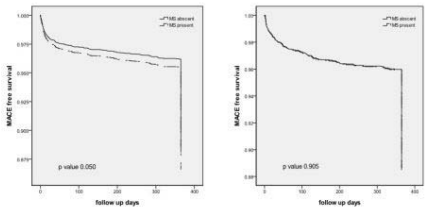

Figure 1. MACE free survival during one year follow up period. A(Left); STEMI group and B(Right); NSTEMI group

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Effects of cardiac pacing on blood pressure in AV block patients with long standing hypertension

Department of Cardiology, College of Medicine, Dong-A University, 26 Daesingongwon-ro, Seo-gu, Busan, Korea

* So Yeon Kim, Jong Sung Park

It is known that artificial cardiac pacing decreases blood pressure. However, the hemodynamic effects of cardiac pacing in patients with long standing hypertension were not studied well. We reviewed medical records of the AV block patients who underwent permanent pacemaker implantation. A total of 123 patients (median age: 77 years, male: 41) who had long standing hypertension at the time of diagnosis were finally selected. Changes of blood pressure (BP) and dosages of antihypertensive agents before and 3 months after starting cardiac pacing were compared. Systolic and diastolic BPs were decreased from 134 ± 13 to 120 ± 11 mmHg ($p<0.001$) and from 78 ± 7 to 72 ± 6 mmHg ($p<0.001$), respectively. Pulse pressures were also decreased from 55 ± 16 to 47 ± 13 mmHg ($p<0.001$) after starting cardiac pacing. When patients taking 1 or 2 (n=94) vs. ≥ 3 (n=29) antihypertensive agents were compared, the drops of systolic BP (12 ± 10 vs. 20 ± 13 mmHg, $p=0.008$) and pulse pressure (5 ± 10 vs. 10 ±15 mmHg, $p=0.010$) were more profound in patients who were taking ≥3 antihypertensive agents. Dosages of antihypertensive agents were reduced in 59 (55%) patients after starting cardiac pacing. Artificial cardiac pacing decreases BP in AV block patients with long standing hypertension and reduces dose of taking antihypertensive agents.