



Letter to the Editor

Acute myocardial infarction patient with recurrent vomiting: What is the best treatment?

Chang-Bum Park^{*}, Hui-Jeong Hwang, Jin-Man Cho, Byung-Hyun Jo, Chong-Jin Kim

Department of Internal Medicine, Graduate School of Medicine, East–West Neo Medical Center, Kyung Hee University, Seoul, Republic of Korea

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Myocardial infarction is a medical emergency with considerable mortality. Peroral antiplatelet therapy with aspirin and clopidogrel is not only a mainstay treatment but also may be beneficial in ST-segment elevation myocardial infarction (STEMI) [1]. But a third of the patients with STEMI showed loss of consciousness or vomiting before or during the percutaneous coronary intervention (PCI) [2,3], which made antiplatelet medication useless. We report a case of STEMI with serious vomiting which was overcome successfully with intravenous aspirin.

A 63-year old gentleman was admitted for acute anterior chest pain for 3 h. He had medicated diabetes for 3 years. Initial ECG showed ST elevation in the anterior lead. In the emergency room, he felt nauseous and vomited several times after being given a loading peroral dose of 300 mg aspirin and 600 mg clopidogrel. We could not be certain that the antiplatelet medication given would be effective. Therefore, we injected 450 mg of intravenous aspirin (ArthalgylTM, Il-Yang pharm, Seoul, South Korea) as a backup measure. Primary percutaneous coronary intervention (PCI) at the left anterior descending artery was performed successfully in this patient without complications. He felt better after the PCI and was medicated without vomiting the next day after the index PCI. He was discharged without complications.

Aspirin, as well as clopidogrel, is the mainstay of antiplatelet therapy in STEMI. Aspirin has been shown to reduce the incidence of death significantly in patients presenting with unstable coronary vascular disease [4]. However, loss of consciousness or vomiting is

relatively common in acute coronary syndrome patients. L-tube feeding could be hazardous in those patients due to the possibility of aspiration pneumonia. In these cases intravenous aspirin can be given as an alternative. But few data concerning the dose and efficacy of intravenous aspirin have been available. There is also a concern that intravenous administration of aspirin may be less effective than oral administration of aspirin because intravenous administration potentially negates the differential effect of orally administered aspirin on platelets and systemic endothelial cells by exposing systemic endothelial cells to higher aspirin concentrations than otherwise. But a direct comparison between peroral and intravenous aspirin has never been studied. Furthermore, based on the pharmacokinetics/pharmacodynamics of oral aspirin, a loading dose of aspirin given to patients who present with myocardial infarction should theoretically show maximum efficacy, but in practice, a higher dose of aspirin has never been shown to improve the outcome of acute coronary syndrome at 30 days [6,7]. Oral aspirin's high concentration in portal vessels inhibits platelet thromboxane, but the marked first-pass effect in the liver reduces aspirin's systemic concentration and attenuates its unwanted effect on endothelial prostacyclin [4]. The recommended dose of oral aspirin is 162–325 mg for the treatment of STEMI [8]. However, few data on the dose of intravenous aspirin was available. We used 450 mg of intravenous aspirin because commercially available intravenous aspirin is 900 mg per bottle, and a little higher than the conventional peroral dose was estimated to be appropriate for acute myocardial infarction patients and easy to order in the emergency situation. Recently, Fuch et al. [5] showed the effect of intravenous aspirin to be very rapid, and using the collagen/epinephrine closure time (CEPI-CT), demonstrated that intravenous aspirin is a suitable alternative to chewable aspirin. They suggested the dose of intravenous aspirin should be less than 250 mg.

In patients with recurrent vomiting or unconsciousness, intravenous aspirin could be considered as an alternative to oral aspirin in patients with recurrent vomiting or loss of consciousness, but further studies related to the routes and dose of administration are needed in the near future.

The authors of this manuscript have certified that they comply with the Principle of Ethical Publishing in the International Journal of Cardiology.

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^{*} Corresponding author at: Division of Cardiology, Department of Internal Medicine, Kyung Hee University Hospital at Gangdong, Kyung Hee University, Seoul, #149, Sangil-dong, Gangdong-gu, Seoul, 134-727, Republic of Korea. Tel.: +82 2 440 6948; fax: +82 2 440 7242.

E-mail address: wwwpcb@hanmail.net (C-B. Park).

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