Genetic variants of reduced clopidogrel absorption and platelet reactivity after standard clopidogrel therapy and serial dose tailoring in the NCT02096419 trial: a pharmacogenetic substudy

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INTRODUCTION: Multidrug resistance gene 1 (MDR1) encodes clopidogrel's intestinal efflux transporter P-glycoprotein. Polymorphism in MDR1 exon C3435C>T has been linked to alterations of clopidogrel absorption and the level of platelet inhibiton.[1-3]

PATIENTS AND METHODS: We performed pharmacogenetic analysis from our previously published trial which evaluated the effect of serial clopidogrel dose adjustment based on continuous platelet function testing in acute coronary syndrome patients with initially determined high on-treatment platelet reactivity on clopidogrel. Fourty-two and fourty-three patients were genotyped for MDR1 C3435T from the control group and the interventional group, respectively. PR levels during 12 month follow up were compared between carriers and non-carriers of loss of function allele 3435T.

RESULTS: 3435T carriers and noncarriers had similar PR levels in the interventional group (p=0.460). PR of 3435T carriers was higher compared to noncarriers in the control group, however, not statistically significant (p=0.084) during entire follow up period (Figure 1).

CONCLUSION: Presence of MDR1 3435T allele was not associated with statistically significant changes in PR in both groups of patients. Larger trials with adequate power are warranted to confirm these results.

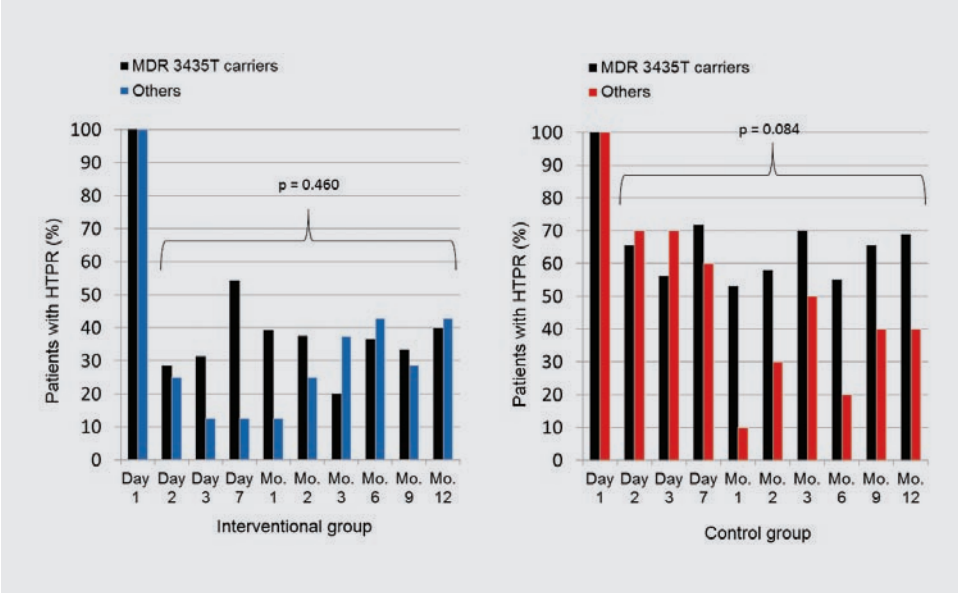

FIGURE 1. The effect of MDR1 3435T allele on platelet reactivity.

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