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Two genotypes increase risk of heart attack

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Angiotensin converting enzyme (ACE) and the angiotensin II type 1 receptor (AT1 R A1166C) gene polymorphism have both been associated with an increased risk of heart attack or stroke. It is not known, however, if an interaction between these two polymorphisms is responsible. In a paper published in April *Heart*, a team from University of Groningen, Netherlands confirms that the ACE-DD and AT1 R-CC genotypes interact to increase the risk of ischaemic events (Heart 2001, **85**:458-462).

Van Geel *et al* genotyped 750 male patients who were participating in the lipid-lowering regression trial, REGRESS (regression growth evaluation statin study). Patients who carried both the ACE-DD and AT1 R-CC genotype had significantly more ischaemic events during the two-year follow-up period than those carrying other genotype combinations (p=0.035, Mantel-Haenszel test for linear association).

Increased angiotensin II activity in these patients stimulates adhesion molecule expression and increases oxidative stress. This enhances inflammation in the artery clots, which become more prone to rupture and could explain why such genetic variants increase the risk of ischaemic events.

References

1. van Geel PP, Pinto YM, Zwinderman AH, *et al*: Increased risk for ischaemic events is related to combined RAS polymorphism. *Heart* 2001, 85:458-462., [http://heart.bmjjournals.com/cgi/content/abstract/85/4/458]