Influence of CYP2C9 and VKORC1 on warfarin dose, anticoagulation attainment and maintenance among European-Americans and African-Americans.

**AIMS:** The influence of CYP2C9 and VKORC1 on warfarin dose, time to target International Normalized Ratio (INR), time to stabilization, and risk of over-anticoagulation (INR: > 4) was assessed after adjustment for clinical factors, intraindividual variation in environmental factors and unobserved heterogeneity.

**MATERIALS & METHODS:** Common CYP2C9 and VKORC1 polymorphisms were assessed in 302 European-Americans and 273 African-Americans receiving warfarin. Race-stratified multivariable analyses evaluated the influence of CYP2C9 and VKORC1 on warfarin response.

**RESULTS & CONCLUSION:** CYP2C9 and VKORC1 accounted for up to 30% of the variability in warfarin dose among European-Americans and 10% among African-Americans. Neither CYP2C9 nor VKORC1 influenced the time to target INR or stabilization among patients of either race, and neither influenced the risk of over-anticoagulation among African-Americans. The risk of over-anticoagulation was higher among European-Americans with variant VKORC1 1173C/T (p < 0.01) and marginally significant among those with variant CYP2C9 (p = 0.08) genotype. Although CYP2C9 and VKORC1 genotyping can facilitate individualized initiation of warfarin dose in African and European-Americans.
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Identification of other factors that can predict such risk consistently in a racially diverse group will facilitate individualized maintenance of warfarin therapy.