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To study role of clinical variables and VKORC1 polymorphism in determination of stability of INR in neurological patients on acenocoumarol

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Abstract

Oral anticoagulation (OAC) is difficult to maintain in therapeutic range and their efficacy may be influenced by number of clinical and genetic variables. The objective of the study is to evaluate the role of VKORC1 polymorphism and correlate with stability of anticoagulation. It is a hospital based study. Patients on OAC were included during 2013-2016. The patients received OAC for cardioembolic stroke, cortical venous sinus thrombosis (CVST) and prevention of deep vein thrombosis (DVT). Demographic, clinical and neurological findings were recorded. Stability of OAC was determined by percentage of international normalized ratio (INR) values in therapeutic range (PINR). PINR >65% were defined as stable and <65% was defined unstable. VKORC 1 polymorphism was studied by polymerase chain reaction and was related to daily dose of OAC and stability of INR. 157 patients with median age of 40 years were included. Ninety two patients received OAC for secondary stroke prevention, 62 for CVST and 3 for DVT. Out of 2976 INR reports, 1458 (49%) were in the therapeutic range, 997 (33.1%) were below and 521 (17.5%) above the therapeutic level. Stable INR was obtained in 75 (47.77%) patients only and was improved by drug modification in 3, and dietary adjustment in 12 patients. VKORC1 polymorphism revealed GG in 127 (80.9%), GA in 22 (14%) and AA genotype in 8 (5.1%) patients. Therapeutic range of INR was seen in 49%, below therapeutic range in 31.5% and above in 17.5%. VKORC1 polymorphism was related to mean daily dose of OAC but not to stability of INR.

References

[1] Singh, P., Kalita, J. and Misra, U.K. (2016) Quality of anticoagulation therapy in Neurological patients in a tertiary care hospital in north India. *Indian J Med Res* 143: 428-433. https://doi.org/10.4103/0971-5916.184301

[2] Sconce, E.A., Khan, T.I., Wynne, H.A., Avery, P., et al. (2005) The impact of CYP2C9 and VKORC1 genetic polymorphism and patient characteristics upon warfarin dose requirements: proposal for a new dosing regimen. *Blood* 106: 2329-2333. https://doi.org/10.1182/blood-2005-03-1108

[3] Rathore, S.S., Agarwal, S.K., Pande, S., Singh, S.K., Mittal, T. and Mittal, B. (2011) Pharmacogenetic Aspects of Coumarinic Oral Anticoagulant Therapies. *Indian J Clin Biochem* 26: 222–229. https://doi.org/10.1007/s12291-011-0133-3

[4] Oner Ozgon, G., Langaee, T.Y., Feng, H., et al. (2008) VKORC1 and CYP2C9 polymorphisms are associated with warfarin dose requirements in Turkish patients. *Eur J Clin Pharmacol* 64: 889–894. https://doi.org/10.1007/s00228-008-0507-5

[5] Schelleman, H., Chen, Z., Kealey, C., et al. (2007) Warfarin response and vitamin K epoxide reductase complex 1 in African Americans and Caucasians. *Clin Pharmacol Ther* 81: 742–747. https://doi.org/10.1038/sj.clpt.6100144

[6] Rose, A.J., Hylek, E.M., Ozonoff, A., Ash, A.S., Reisman, J.I. and Berlowitz, D.R. (2010) Patient characteristics associated with oral anticoagulation control: results of the Veterans Affairs Study to Improve Anticoagulation (VARIA). *J Thromb Haemost* 8: 2182-2191. https://doi.org/10.1111/j.1538-7836.2010.03996.x

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