Personalizing antiplatelet therapy-moving to clinics

Subraja Kumaresan · Steven Dkhar

Dear Editor,

The commentary "*Bringing pharmacogenetics to the bedside,*" published in this issue by Gupta, focuses on the applications of genetic testing in personalizing antiplatelet therapy.

Robust evidence from various studies including genome wide studies has established the genetic influence of *CYP2C19* genotypes on the outcome of clopidogrel therapy. Now researchers are attempting to take this from the bench to the bedside. As mentioned by the author in the commentary, cost is a limiting factor for implementing pharmacogenomics in practice. This cost issue was addressed in a model-based cost effectiveness analysis that evaluated the benefit of *CYP2C19* genotype-guided antiplatelet therapy over the conventional therapy, irrespective of the genotype [1]. They concluded that genotype-guided antiplatelet therapy is more cost effective, with fewer adverse outcomes.

The beginning of personalized medicine in clinical practice can be evidenced from the reports of the prospective proof of concept trial, which introduced point-of-care genetic testing for initiating antiplatelet therapy [2]. This point of care genetic test was validated and gave rapid results within minutes. The test can be effectively done by nurses at the bed side.

A more pragmatic approach in the implementation of genotyping in personalized medicine was presented in the Vanderbilt PREDICT project [3]. This multidisciplinary project, with experts from various fields such as medicine, clinical pharmacology and clinical pathology, etc., was designed to incorporate genotyping of *CYP2C19* for usage of clopidogrel in individuals undergoing cardiac catheterisation. The project aims at developing electronic medical records of genotyping and evidence based decision-support

algorithms and rules in guiding the practitioners for prescribing. Success of this PREDICT project can further lead to incorporation of other drug gene interactions, including warfarin-*CYP2C9* and simvastatin-*SLCO1B1*.

Further encouragement is provided by insurance services that decided to reimburse the cost expense spent towards genetic testing [4]. These firms have realised that genetic testing is a cost effective strategy for implementing efficacious drug therapy with minimal side effects.

It is reasonable to conclude that medical science has advanced to its best in making the possibility of incorporating pharmacogenomic testing to clinical practice. Hence, the new era of personalized tailored antiplatelet therapy is not very far from our reach.

Sincerely,
Subraja K MD,
Dkhar SA MD.

S. Kumaresan (✉) · S. Dkhar
Department of Pharmacology, Jawaharlal Institute of Postgraduate
Medical Education and Research (JIMPER),
Pondicherry, India
e-mail: subrajakumaresan84@gmail.com

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