

S20-2 Issues for appropriate use of genetic information in drug therapy

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The use of genetic information in clinical practice has greatly expanded as the field of human genetics has been making dramatic progress. Drug sensitivity as one of the multifactorial diseases is expected to be an example for which personalized medicine (tailored medicine) will be applied in the future. (an individual's drug dosage will be determined based on his/her genotype in personalized medicine.) In the U.S., an increasing number of drugs have now had their usefulness ranking documented. As for Japan, the relationship between the metabolism of the anticancer drug irinotecan and polymorphism in the *UGT1A1* gene has been clearly noted in the attached documentation for this drug since June 2008. In addition, the Japanese national health insurance program now accepts the performance of *UGT1A1* genetic testing since March 2009.

The appropriate use of the genetic information in drug therapy is thought to be different from the experiences that we have so far accumulated from the single-gene genetic diseases or from studies performed in research settings. Increased research and evidence obtained in the clinical setting will enable us to utilize more genes for use in the field of pharmacogenetics and more facilities will thus be able to conduct pharmacogenetic testing in clinical practice. But, various points have not been clear, yet. In each hospital, a framework with a focus on a team made by pharmacists is urgently needed. We herein attempt to clarify some of the important points that are required in order to establish effective pharmacogenetic testing in clinical practice.