PERSONALIZED MEDICINE AND THE PRESCRIPTION ADAPTED TO THE PATIENT'S DNA ARRIVE IN PUERTO RICO

For the first time, Personalized Medicine is offered in Puerto Rico, which allows patients to select the correct dosage of drugs.

The efficacy of drugs, their potential and side effects are not only a result of the selection and dosage of the drug, but of the metabolism and interaction with its receptor. This metabolism is carried out by the enzymes of the Cytochrome P450 System (CYP450), located in the liver.

Variability in the CYP450 system in humans can alter individual dosage, effectiveness, and safety, when the recommended dosage is designed to treat an "average" person. These variations are particularly relevant for drugs used in mental health, cardio-metabolic diseases, and pain control. These can be measured by DNA genotyping after an unwanted effect and even before treatment. Drug selection and dosage can be tailored to provide effective and safe therapy on an individual basis (DNA-Targeted medicine). This ability is critically important when it comes to genetically mixed populations such as Puerto Rico, where African, Amerindian and European ancestry converge in each individual.

The test consists of the analysis of the CYP2C9, CYP2C19 and CYP2D6 genes, using only a blood sample or a buccal sample obtained with a swab. The results and direction of genotyping markedly improve the efficacy and safety of drug therapy. through:

The determination of the functional status of each patient for the three dominant isoenzymes of CYP450 which are relevant for the metabolism of neuropsychiatric and cardio-metabolic drugs: CY92D6, CYP2C9 and CYP2C19.
A high-resolution genotyping of a total of 37 variations in the genetic code for these isoenzymes: CYP2C19 (20 alleles), CYP2C9 (7 alleles), and CYP2C19 (10 alleles).
Characterized and fast promoter alleles for the CYP2D6 and CUP2C19 genes (* 2nd and * 17, respectively) conferring an increase in metabolic function.
Objective indices for alteration and metabolic reserve, as well as alteration of alleles.

HIL Omet PhyzioType ™ System: Determination of high or low metabolic risk for drugs for neuropsychiatric and cardio-metabolic diseases

Genomas has developed the HILOmet PhyzioType system to assist providers by offering DNA-based analysis tools, guiding them in neuropsychiatric and cardio-metabolic drug options in patients with evidence of drug resistance or intolerance. The HILOmet PhysioType System offers clinicians the ability to customize drug therapy, as well as increase safety and compliance in the most challenging cases such as:

Patients with drug intolerance, side effects, resistance to treatment, or therapeutic failures.
Patients who are treated with combinations of drugs or medical devices.
Vulnerable patients due to early or advanced age (children, adolescents and the elderly).

Hospitalized patients or with multiple medical conditions.
Currently Genomas, under a distribution and services agreement with HRP Labs in Puerto Rico, offers the physician an assessment of drug metabolism and metabolic risk for 250 medications, including: 130 neuro-psychiatric drugs and 120 cardio-metabolic drugs.

The HILOmet PhyzioType system provides through 3 individual tests, high resolution genotypic combination results for a total of 37 variations in the CYP2D6, CYP2C9 and CYP2C19 genes (on alleles 20, 7 and 10 respectively). The isoenzymes respectively encoded by the CYP2D6, CYP2C9 and CYP2C19 genes are critical for the metabolism of neuropsychiatric and cardio-metabolic drugs. Its biochemical variability substantially alters the individual's response to drugs. This system offers an interpretive guide to determine the status of drug metabolism. Physicians will be able to make therapeutic decisions based on knowledge of metabolic capacities. HILOmet tests include a support system for managing medications in the Personalized Health Portal (PHP), this is a graphical portal exclusively for physicians.

Drug intolerant or treatment resistant patients can be detected by their drug metabolic function and nature reserve as a consequence of genetic variation. Therapy can be directed to drugs with lower metabolic risk, whose metabolic pathway is functional, thus avoiding drugs with higher risk. The guidance provided by the HILOmet PhyzioType tests for each patient markedly improves the safety and efficiency of neuro-psychiatric and cardio-metabolic therapies.