IMPACT Newsletter

4th Edition | October 2015

Introduction

The goal of the IMPACT newsletter is to provide you with exciting news, updates and study milestones. Without your referrals and continued support, we would not have been able to reach the high number of patients who have already received pharmacogenomic testing through IMPACT. Thank you for all of your support!

Meet the IMPACT team! Visit us at www.im-pact.ca.

IMPACT Study Milestones

- The IMPACT study was initiated in June 2011 after receiving $19.5 million from the Ontario Ministry of Research and Innovation, the CAMH Campbell Family Mental Health Research Institute and Larry & Judy Tanenbaum.
- In May 2012, the first IMPACT patient was consented.
- In January 2013, for the first time in Canada, patients were able to receive genetic testing at their family physician's office; this was made possible through the IMPACT study.
- In November 2013, CAMH and Assurex Health signed a partnership agreement to bring the benefits of a personalized approach to psychiatric treatment to more Canadians.
- Beginning in November 2014, patients enrolled in the IMPACT study were tested using the Assurex Health proprietary technology, GeneSight Psychotropic.
- Since May 2012, 1,359 clinicians have completed the clinic registration process.

Important Study Reminders

Participants are asked to provide the following information at each stage of the study:

Baseline (upon consent)
- Symptoms
- Medication History
- Side Effects

Week 4
- Symptoms
- Current Medications
- Side Effects

Week 8
- Symptoms
- Current Medications
- Side Effects

Symptomology is gathered through scales such as BDI and PANSS; depending on the patient's diagnosis. Please discuss with your patients the importance of completing these scales at each time point of the study.

Clinic Registration

In order to receive your patients' GeneSight Psychotropic reports, you must register your clinic by filling out the IMPACT Clinic Registration Form. This form can be accessed by visiting http://impact.camhx.ca/en/docs/IMPACT-AssureRx-RegistrationForms. Please complete and return this form via email to registrations@assurexhealth.com or fax to 1.888.894.4344.

The second step in the clinic registration process is gaining access to reports. GeneSight reports can be faxed, once your office verifies the fax number, or viewed online via the GeneSight portal. Besides providing your email address for online access, you may also designate access to your staff by providing their email addresses.

Referral Process

Referring a patient to the IMPACT study is easy!

To refer a patient to the study, please download and complete the appropriate referral form below and return it to the IMPACT team via email impact@camh.ca or fax 416.979.4666:

- IMPACT Adult Referral Form (16+)
- IMPACT Adolescent Referral Form (7-15)

A Research Analyst from CAMH will then contact your patient to walk him/her through the informed consent process in order to enroll him/her in the study. If you have any questions regarding the referral process please contact us at 416.535.8501 ext. 30240.

Webinars

Assurex Health offers educational webinars that provide treating clinicians with more information about GeneSight technology and pharmacogenomics in general.

If you are interested in participating, register by visiting http://genesight.com/educational-webinars.

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IMPACT Study Status

As of September 2015, the IMPACT Study has enrolled 4,018 patients for pharmacogenomic testing, averaging just over 100 patients enrolled per month.

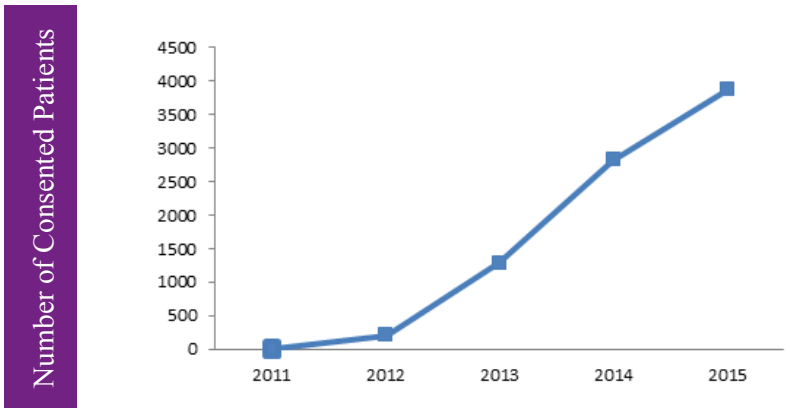

FIGURE 1 Number of patients consented to participate in the IMPACT Study.

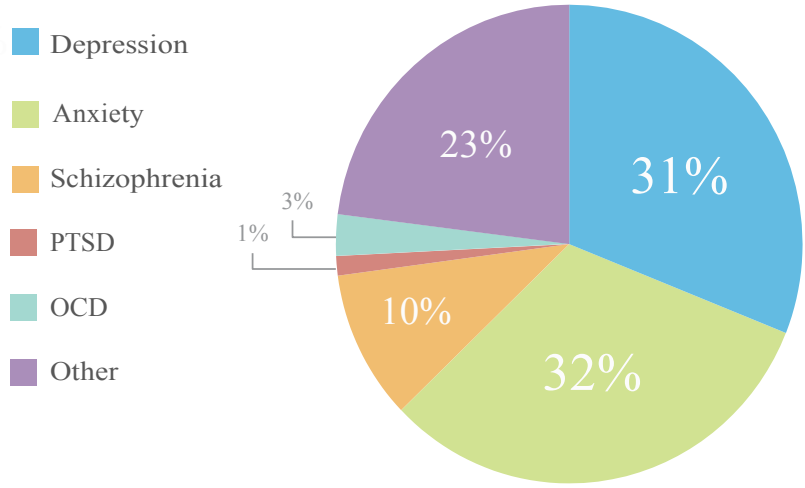

FIGURE 2 Percentage of IMPACT study participants with a primary diagnosis of depression, anxiety, schizophrenia, PTSD, OCD or other. Patients may have a secondary diagnosis

Gene Spotlight

Drug metabolizer CYP2C19

The cytochrome P450 gene CYP2C19 located on chromosome 10, encodes a liver enzyme involved in the metabolism of medications. CYP2C19 is involved in the metabolism of 38% of all medications on the GeneSight test. CYP2C19 plays a major role in the metabolism of amitriptyline, citalopram, clomipramine, doxepin, escitalopram, and imipramine, and a partial role in the metabolism of fluoxetine, selegiline, sertraline, and venlafaxine. The CYP2C19 *1 allele accounts for the wild type and has normal enzymatic activity, while CYP2C19 *2 and *3 have no enzymatic activity and thus generate Intermediate or Poor metabolizer phenotypes when present with *1 as a heterozygote, or as homozygotes, respectively. The *17 variant increases enzymatic activity, and patients who are homozygous for *17 are less likely to respond to substrate medications at their standard doses due to lower drug plasma concentration.

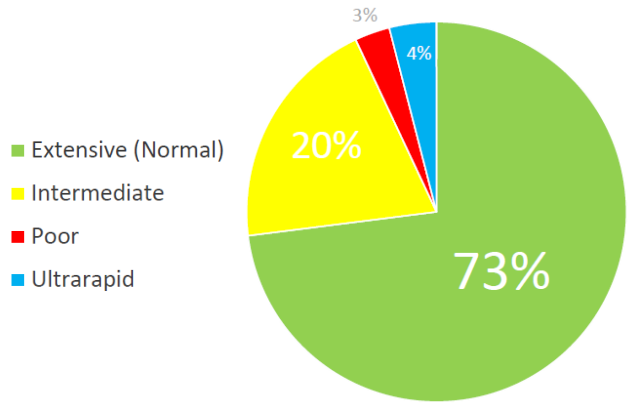

FIGURE 3 CYP2C19 Phenotype Frequency which is based on internal Assurex Health data of over 100,000 tested patients

Testimonials

We would like to thank Dr. Yvonne Parnell, PhD and Dr. Paul Latimer, MD, PhD for sharing their experiences with GeneSight pharmacogenomic testing:

Dr Parnell:

I am a Registered Psychologist and Psychoanalyst who has worked in different Health Care sectors for 30 years. To date, I have referred 24 patients to the IMPACT Study. Their GPs and psychiatrists have worked with them over many years to find appropriate medications.

Most of the patients had been on many different antidepressants and antipsychotics, without feeling a great deal of relief. 22 of the 24 referred patients were on medications that have gene-drug interactions (medications in the yellow or red category). Knowing their genotype-drug matches has provided them with renewed hope for a medication that might be helpful. I have introduced my 4 GP medical colleagues to the IMPACT Study, and they started referring patients immediately after seeing what GeneSight did for my patients."

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Testimonials Continued

Dr. Latimer:
I am a research oriented General Psychiatrist with 40 years experience. I have referred 11 patients to the IMPACT Study. I have found that implementing GeneSight testing to my practice is very easy and I have no hesitation in using it. I have been using GeneSight testing mostly in my bipolar patients who are not responding well to treatment or who have unusual drug patterns. I have found GeneSight most beneficial in non-responders, those who seem unusually sensitive to side effects or those who require unusually large doses of medication.

Please let us know if you would be interested in sharing your experiences with pharmacogenomic testing. We are always interested in feedback — reach us by email at impact@camh.ca.

GeneSight Psychotropic

The GeneSight Psychotropic laboratory developed test analyzes how 8 genes may affect a patient's metabolism and response to 33 Health Canada approved antidepressant and antipsychotic medications. GeneSight testing includes genotyping of pharmacokinetic genes from the Cytochrome P450 family and pharmacodynamics genes related specifically to the serotonin system. GeneSight differs from other pharmacogenomic testing in that it is combinatorial, which means taking into consideration how a combination of genetic variations can affect a patient's ability to respond to a medication.

For more information, visit: www.genesight.com

In The News

New Study Finds GeneSight (CPGx™) Precision Medicine Test Provides Significant Health Care Cost Savings

Combinatorial approach improves medication adherence and reduces polypharmacy in patients treated with antidepressants and antipsychotics.

A new study published in Current Medical Research and Opinion, which included data from more than 13,000 patients being treated for behavioral health issues, demonstrated $1,036 in annual prescription savings per patient when healthcare providers used the GeneSight® combinatorial pharmacogenomic (CPGx™) test results to guide treatment decisions compared with usual trial-and-error prescribing. Important to note is that GeneSight improved patients' adherence to the prescribed treatment by 17 percent, and decreased polypharmacy with one out of five patients being prescribed fewer medications after receiving GeneSight testing. CPGx™ is the evaluation of multiple genetic factors that influence an individual's response to medications.

To download the full study, visit: http://genesight.com/medcostudy

For More Information About IMPACT Study

WEBSITE	www.im-pact.ca
PHONE	416.535.8501 ext. 30240 | 1.800.928.3316
FAX	416.979.4666
EMAIL	impact@camh.ca