

## INTERVIEW WITH DR. RENELLE MYERS – INAUGURAL RECIPIENT OF THE GEOFFREY OGRAM RESEARCH GRANT (GOMRG).

The Geoffrey Ogram Memorial Research Fund (GOMRF) was created in memory of Geoffrey Ogram, former board member of Lung Cancer Canada (LCC) who passed away from lung cancer. The goal of the fund is to provide a mechanism for scientists to study innovations and accelerate the application of new knowledge relating to the early detection of lung cancer and the etiology of lung cancer in different demographics and populations.

A number of applications were received and reviewed by the LCC research committee, and the inaugural recipient of the GOMRF award was presented to Dr. Renelle Myers for **A Pilot Breathomics study for biomarker discovery in lung cancer.**

We recently spoke with Dr. Myers, here are some excerpts from the interview:

### **Who is Dr. Myers?**

I am an interventional pulmonologist, a clinician and research scientist at the BC Cancer Centre and Vancouver General Hospital. My clinical work focuses on the diagnosis and work up of lung cancer. As an interventionist, I perform lung biopsies and mediastinal staging for lung cancer.

My interest in research is as a result of diagnosing lung cancer in patients, having to share the result of tests with them, seeing patients' everyday dealing with the devastating effects of the disease, and thinking there has to be a better way. Earlier in my career there was little improvement in the treatment and mortality rates (or outcomes) for lung cancer, and this sparked my interest in early detection and trying to figure out a way to beat this deadly disease.

### **What attracted you to this area of research?**

I have practiced respiratory in Vancouver for the past 3 years, at BC Cancer, Vancouver center, 37% of newly diagnosed lung cancer patients we see are never smokers. Globally lung cancer is becoming a nonsmoker's disease, the rates of lung cancer in never smokers are rising around the world, especially in Asian females. Our group wanted to figure out why.

We looked at detailed histories of lung cancer patients, including where they had lived over the course of their life. We noticed that female never smokers with lung cancer had an odds ratio that showed a 2 times likelihood of getting lung cancer if they had high levels of air pollution exposure. This became the question for the current project: why does some patient's exposure to air pollution result in lung cancer and not others?

### **What does a high level of air pollution mean?**

One important measurement of air pollution is PM<sub>2.5</sub>. This is a measure of the particulate matter in the air we breathe that is 2.5 microns or smaller. PM<sub>2.5</sub> was declared a carcinogen (cancer causing) by the world health organization in 2013. Average exposures in Vancouver are 7.5mcg/m<sup>3</sup>, but we saw patients who had lifetime exposures of 40-60 depending on where they lived.

## **Tell us about the project?**

In Canada, there currently is no approval for lung cancer screening for never smokers, but with the increase in incidence it is important to determine who may be at risk. Breath biopsies – which are samples of breath of never smokers diagnosed with lung cancer, are compared to those of spouses or family members who have had a similar environmental exposure for a majority of their life and did not get lung cancer. The research hopes to determine predictive differences that can be identified in these never smokers that would put them at risk for developing lung cancer – allowing them to be recommended for low dose CT screening, resulting in cases being caught early and lives saved. This would be a breakthrough by using breath to identify risk for lung cancer.



## **Tell us about the different phases of the project and, if the findings are positive, what this means for Canadians.**

The first phase of the project has started. Participants provide breath samples after eating a peppermint tablet and the sample is analyzed to look for differences in metabolism between never smokers with lung cancer and never smokers without lung cancer who have had similar exposures. If our hypothesis is correct, and we are able to find a signal (biomarker), we will follow up with a

larger study to validate the research. If this turns out to be positive, we will hopefully be able to roll this out and have it adopted into practice. Ultimately, adding a breath test would become part of a risk prediction model to determine which never smokers are at increased risk for lung cancer and should participate in lung cancer screening programs using low dose CT scanning.

## **What is your hope for the future of research and lung cancer?**

I hope research continues at a rapid pace to improve survival for lung cancer patients. The key is early detection. As a clinician, if I can find lung cancer in someone at an early stage, they can be treated with surgery and be cured. Unfortunately 80% of lung cancer patients present with stage 3 or 4 disease, and though there are new treatments such as immunotherapy improving survival, they cannot be cured. Detecting lung cancer at an early curable stage for never and ever smokers is where I see the future for lung cancer.

I am grateful for the opportunity to have received this grant and very honored to be the first recipient of the Geoffrey Ogram Memorial Research Grant. We have the first breath biopsy lab in Canada and the team is working hard and hoping to create an easy way to obtain a biomarker through breath.

### **Any final words?**

The impossible is always possible if you have ideas. Medicine doesn't change if you don't take risks or chances. You can't get a grant if you don't apply. It's ok to be turned down, I have been turned down. A negative study is still a breakthrough as it tells you what doesn't work and leads you to try something else. There are so many questions to be answered and a lot of research that cannot happen without funding, and this grant made this study happen! Grants like this create opportunity to advance science and lung cancer treatment.

Thank you to the Ogram family for their continued support and generosity and to the individuals and groups that have become involved in raising funds for the grant.

### **CALL FOR STUDY PARTICIPATION**

**If you are a person who has had lung cancer, are a never smoker and would like to participate in the study please contact the number below.**

**The study criteria for participants:**

**18 years or older, never/light smoker- having smoked less than 100 cigarettes in a lifetime with a history of lung cancer not currently undergoing active treatment.**

**Phone # 604 675 8088 to reach the study coordinator and find out more.**