



Seeds4Hope Year One Progress Reports 2010 Grant Recipients - Part 2

“Phase II trial with carboplatin in addition to dose dense actinomycin/ cyclophosphamide/ taxol (ACT) in women with triple negative breast cancer: testing for novel prognostic biomarkers.”
- **Dr. Caroline Hamm**, Oncologist, WRCC; Adjunct Professor, University of Windsor



Triple negative breast cancer (TNBC) comprises 10-15% of all breast cancer patients and represents a younger median age at diagnosis. While patients with other forms of breast cancer often benefit from the development of selective drugs, as of yet there are no selective therapies in the treatment of TNBC patients. Chemotherapy is the only systemic treatment option for this group of patients, and because patients present with higher stage disease, prognosis can be poor. Refining current treatment protocols and finding selective drug targets for this form of breast cancer is of high priority. Prior to the initiation of this trial, there was significant data to support that adding platinum based drugs to the standard chemotherapy could significantly improve survival rates for TNBC patients. Within our centre we had used this regimen for almost one year and had early evidence of increased efficacy. However, a proper clinical trial design like the one employed in our study is required to definitively determine whether patient outcomes are improved. We are taking this study one step further by profiling the expression of a number of genes that may be involved in driving TNBC cell growth. Linking cell and molecular analyses with a proper clinical trial, could help us determine whether the expression of select genes is linked to patient prognosis; thereby telling us which patients may respond favorably to this particular treatment regimen. Furthermore, this work could reveal novel ways of directing drug development for this group of breast cancer patients.

Due to the complexity of performing clinical trials and the inherent delays in setting up these complex studies, patient accrual only began in April. Nevertheless, we already have nine patients. This is an unusually successful accrual, as in most trials our accrual goal would be 2 - 3 patients in a 12 month period. This speaks to the high motivation of the research team as well as the excellent results to date. To facilitate reaching our target of 90 patients, we have been successful in listing this trial with the Canadian Cancer Trials - trial ID OCT1220. In addition, Sault Ste. Marie, Grand River and Hamilton have requested the protocol and are expected to open the trial. To date we have banked 10 TNBC samples. We will add non-TNBC samples to this data with the support of Dr. D. Shum, as well as collecting several control samples to optimize all of our lab reagents and procedures for cell and molecular analyses.

“We are very excited about this trial. We have achieved a very fast rate of patient participation in this trial... one of the best we have run in our experience. As well, Dr. Porter has been analyzing a high number of samples to try to delineate possible new targets for treatment in the battle against triple negative breast cancer. As well, we will likely open this trial in two new centres and have listed the trial in the Ontario Clinical Trials website and hope that this too will increase patient access to this very exciting trial.” - **Dr. Caroline Hamm**

“Preclinical Evaluation of Anti-cancer Activity and Mechanism of Apoptosis Induction by Dandelion Root Extract (DRE) in In Vitro, In Vivo and Ex-vivo Models of Leukemia”
- **Dr. Siyaram Pandey**, Depart. of Chemistry & Biochemistry, University of Windsor



Despite aggressive research efforts to find selective anti-cancer chemo-therapeutics, we are still far from such agents and are still limited to the toxic treatment options including drugs and radiation therapy that cause indiscriminate killing of cancerous as well as normal healthy cells. Damage to normal, non-cancerous cells causes harsh side effects and mutations to DNA that can increase the risk of these cells becoming cancerous. Natural products have been shown to play a prevailing role in drug development with 50% of all anti-cancer drugs approved between 1941 and 2006 being either natural products or obtained from natural sources. Within the vast repertoire of Mother Nature, there may be compounds that specifically target and kill cancer cells. Because of Seeds4Hope funding, we are able to examine the hypothesis that Dandelion Root Extract (DRE) may have anti-cancer potential.

Our phase 1 study results obtained during the first year of our Seeds4Hope project show that DRE is effective in inducing cell suicide in very aggressive and drug resistant type of blood cancer cells known as chronic monocytic myeloid leukemia (CMML). We discovered that a repeated treatment with low dose of DRE was effective in killing most of the cancerous cells. More importantly, we have observed the selectivity of DRE, as it has shown no significant toxicity on non-cancerous healthy blood cells. Furthermore, we have discovered that DRE is also effective in killing other aggressive cancer cells including Human Melanoma, colon and pancreatic cancer cells. We have evaluated efficacy of DRE (i.e., how well it works) on samples of leukemia blood obtained from six patients so far. Results are very encouraging. Almost all leukemia samples obtained responded very well to DRE. In parallel, obtained peripheral nucleated blood cells from healthy volunteers were used as non-cancerous ex-vivo models and we evaluated the toxicity (if any) of DRE. Our results indicated no toxicity to the non-cancerous cells.

“The Seeds4Hope grant has been instrumental in bringing our research project on the anti-cancer effects of Dandelion Root Extract to an exciting state of pre-clinical evaluation.” - **Dr. Siyaram Pandey**



Cancer Facts & News – Part 6: Dimensions of Cancer

By: Dr. Michael Dufresne, Seeds4Hope Administrator

In Part 5, I explained that cancerous tumours will continue to grow only if cells in all parts of the tumour have access to blood vessels that provide nutrients and oxygen to the cells, and remove waste products. Before the 1960s, researchers believed that this access occurred by dilation (i.e., expansion) of pre-existing blood vessels in the tumour. However, subsequent research proved this hypothesis wrong, and demonstrated that the increased blood supply to the tumour actually reflects growth of new blood vessels that penetrate into cancerous growths. This process is termed **tumour angiogenesis**. Interestingly, angiogenesis is not unique to cancer. As with so many processes associated with cancer, it has a normal counterpart at specific times during normal growth and development in the human body, for example, during the development of the circulatory system by the developing child in a mother's womb, and during the formation of new blood vessels in adults. Simply put, normal angiogenesis is necessary for growth and development in humans, while tumour angiogenesis is necessary for growth and development of cancerous tumours. Given the necessary role angiogenesis plays in cancer - not to mention the exciting implications for developing anti-angiogenesis cancer treatments that may control tumour growth or stop cancers from spreading - I'll spend a little time discussing tumour angiogenesis research before continuing with my overview of how cancer develops (i.e., **cancer progression, carcinogenesis**). The research, like the topic, is complex, so for sake of clarity, I'll present some of the most significant results in the context of specific research questions such as: **How does angiogenesis occur? What prompts angiogenesis? How does normal angiogenesis differ from tumour angiogenesis? Can inhibitors of angiogenesis slow tumour growth and metastasis?** Stay tuned!

Exciting Events!

Our Foundation is privileged to partner with wonderful people in our community for fund raising events. We gratefully acknowledge our event partners from **January**:



Thanks to everyone who stopped by our booth at the *25th Annual Wedding Extravaganza* held at the Caboto Club on January 14th and 15th. Brides and grooms learned how they can donate to our Foundation in lieu of traditional wedding favours.

Six year old Caleb and four year old Aiden Durocher asked their mom if they could have a dinner to raise money for people with cancer. The boys invited family, friends and members of their church to their home for dinner, and with a little help from mom and dad, raised \$97.00. What a wonderful accomplishment from our youngest donors!

Coming Events in February!

10th Come out for a Valentine's Day-themed fashion show, "Show Your Love" at The Room, 255 Ouellette Ave. Prizes and live entertainment. \$5 at the door, doors open at 8:00pm.

11th Registration is now taking place for the **16th Annual Cancer Centre Foundation Bowl-a-thon**. The Bowl-a-thon will once again take place at REVS Bowlero Family Fun Centre. Registration/check-in begins at 12:30pm, bowling starts at 1:00pm. New this year – register yourself or your team online! You can also collect pledges and donate online. Check it out at www.windsorcancerfoundation.org/bowlathon.

24th-26th Come visit us at the **RV Guys Show & Sale** at the Windsor Expo Centre. Learn how you can help support local cancer patients by donating, becoming a volunteer, or putting on your own event! Show hours are Fri. 10am-9pm, Sat. 10am-6pm, Sun. 10am-5pm. Adults \$8, family \$14, seniors \$5, and kids under 12 are free (free daycare and play area). Visit www.rvguysshow.com for all the details.

SAVE THE DATE!
16th Annual
Cancer Centre Foundation Bowl-a-thon
Saturday, February 11, 2012
Registration 12:30PM, Bowling 1:00PM
REVS Bowlero Family Fun Centre
675 Tecumseh Road West
Prizes for highest score, most honest bowler, and best dressed team!
You don't have to know how to bowl to have fun!
Contact Renata Sznajkart for details:
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Windsor & Essex County
Cancer Centre Foundation
Proceeds to support the Regional
Comprehensive Men's Health Program

Would you like to attend or organize an event? Call, email or visit Renata in the Foundation office!

Windsor & Essex County
Cancer Centre Foundation

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