



Riordan
Clinic

Health Hunters

August
2019

Vol. 33
No. 8



Inside this Issue

Cancer-Related Fatigue	1-2
Clinical Research at the Riordan Clinic	3-5
Essential Oil Spotlight	5
Check Your Health	6
Upcoming Events	6-7
I Choose Real Health	7-8

Cancer-Related Fatigue

Fatigue is a common problem in cancer patients, both among those undergoing active treatment and in survivors. Some reports show that as many as 90% of cancer patients struggle with fatigue at some point in their journey and a prevalence of up to 45% in cancer survivors. The fatigue that comes with cancer, called cancer-related fatigue (CRF), is different from the fatigue of daily life. CRF causes disruption in all aspects of quality of life, and may be a risk factor for reduced survival.



AUTHOR

Lucas Tims, ND, FABNO

By definition, CRF is a distressing, persistent, subjective sense of physical, emotional, and/or cognitive tiredness or exhaustion related to cancer or cancer treatment, that is not proportional to recent activity, and interferes with usual functioning. More and more, cancer centers are relying on integrative medicine practitioners to help manage this complex condition with complementary and alternative (CAM) therapies, as these have been shown to be the most promising interventions available at this time.



WHAT CAUSES IT?

While the causes of CRF are not fully understood, it is generally thought to be a multifactorial condition and component of a symptom complex which may include depression, anxiety, and sleep disorders. With CRF, sometimes there are measurable factors involved, such as anemia, nutritional deficiencies or hormonal imbalances. However, more often there are intangibles that may contribute to CRF, such as pain, stress, poor sleep patterns, deconditioning, and medication side effects. On top of all that, there is the fatigue that can be caused by cancer itself, as well as cancer treatments such as surgery, chemotherapy and radiation.

Given the complexity of the problem and the lack of objective measurement of what is primarily a subjective symptom, interventional trials have been somewhat limited.

Continued on page 2



Riordan Clinic is a not-for-profit 501(c)(3), nutrition-based health facility in Wichita, Kansas cofounded in 1975 by Olive W. Garvey and Hugh D. Riordan. We have integrated lifestyle and nutrition to help you find the underlying causes of your illness. Since our inception in 1975, the mission has been clear and unwavering to "...stimulate an epidemic of health."

WHAT CAN BE DONE?

Despite the lack of a universal objective measurement for CRF, research into effective interventions has continued to build and better inform clinicians on how to mitigate this highly prevalent condition. Several evidence-based therapies have been identified to potentially help improve CRF. Let's take a look at some of these:

GINSENG

This traditional Chinese Medicine herb has long been used as a natural energy booster. In a large study led by Mayo Clinic, high doses of the American ginseng (*Panax quinquefolius*) given over two months was effective at reducing CRF¹. Ginseng's improvement of fatigue is likely due to its known mechanisms of decreasing inflammation and regulating cortisol levels.

IV VITAMIN C

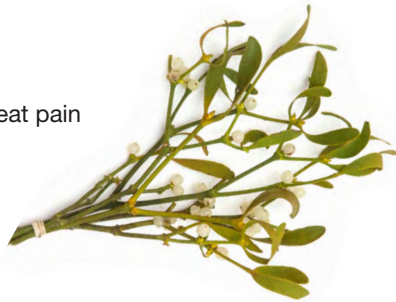
A 2018 review of several human trials concluded that intravenous ascorbic acid (vitamin C) up to 25g can improve several quality of life measures including CRF². Of note, most of these trials have shown this effect in patients undergoing concomitant chemotherapy treatments.

MISTLETOE

European mistletoe (*Viscum album*) extracts have an extensive history of use and clinical evidence as a safe and effective adjunctive cancer treatment to help with quality of life measures, including CRF. Although it is used across all tumor types, gynecologic and breast cancer patients have shown particular improvement in fatigue with mistletoe use³.

ACUPUNCTURE

More established as a tool to treat pain and nausea in cancer patients, recent studies have also shown this versatile modality to be quite beneficial for CRF⁴.



EXERCISE

Aerobic exercise, with its myriad health benefits, has been clearly shown to improve CRF, particularly in survivors. The American Cancer Society recommends that adult cancer survivors get at least 150 minutes of moderate intensity or 75 minutes of vigorous activity each week (or a combination of the two). This intervention not only helps with CRF but also with reduction of cancer recurrence.

SLEEP

The majority of studies that have assessed both sleep and fatigue in patients with cancer provide evidence supporting a strong correlation between CRF and various sleep parameters. It's clear that the quality and duration of sleep, or lack thereof, reciprocate with

CRF. Improving sleep hygiene is crucial and often times the first place to start. Beyond that, a trial of a natural sleep aid, such as melatonin, may be enough to tip the scales in favor of improved sleep.

SOME REPORTS SHOW THAT AS MANY AS 90% OF CANCER PATIENTS STRUGGLE WITH FATIGUE AT SOME POINT IN THEIR JOURNEY AND A PREVALENCE OF UP TO 45% IN CANCER SURVIVORS.

TAI CHI

The traditional Chinese health-promoting exercise, often done in groups, has been shown to have many positive effects in cancer patients. A meta-analysis investigating the effectiveness of Tai Chi on CRF concluded that the practice leads to short-term ameliorative effects that are actually superior to rigorous physical exercise and psychological support⁵. The best effects were shown in patients with breast and lung cancers.



SUMMARY

CRF is one of the most distressing cancer-related symptoms and requires a clinician or team of clinicians to look at many underlying causes and interrelated conditions. Cancer patients are best served by working with an integrative practitioner who has knowledge of all of the CAM therapies indicated for CRF, and who continues to look at all potential underlying causes, even as the patient moves into long-term survivorship. As the understanding of cancer and its treatments evolves rapidly, so will our understanding of CRF and how to best manage it.

Dr. Lucas Tims, as a board-certified, Naturopathic Oncologist, is an expert in how to utilize natural therapies to support patients during any phase of treatment or care setting. Dr. Lucas joins the Riordan Clinic after serving in a leadership role as Medical Director of Integrative Oncology at Cancer Treatment Centers of America's (CTCA) Western Regional Medical Center. In addition to patient care, Dr. Lucas enjoys doing research, teaching and writing for medical journals. He is a member of the Oncology Association of Naturopathic Physicians and the Society for Integrative Oncology. He is currently accepting new patients at the Riordan Clinic in the Overland Park location.

References:

- 1) PMID: 23853057
- 2) PMID: 29719430
- 3) PMID: 19519890
- 4) PMID 29128952
- 5) PMID: 29564620

Clinical Research at the Riordan Clinic:

Continuous Intravenous Vitamin C in the Treatment of Cancer



AUTHOR

Nina Mikirova, PhD

The below summary is from a research article by Dr. Nina Mikirova, Director of Research at the Riordan Clinic. This article explains an innovative therapy being developed at the Riordan Clinic for patients who have cancer utilizing continuous infusion of intravenous vitamin C. Research is an important tool utilized at the Riordan Clinic for developing cutting edge clinical therapies.

Intravenous vitamin C (IVC) therapy is widely used in naturopathic and integrative oncology. Preclinical studies of large doses of ascorbic acid (vitamin C) have been reported to show significant anti-cancer effects in animal models and tissue culture investigations.

Studies on understanding the biological activities of ascorbate have led to a number of hypotheses for mechanisms of anti-cancer activity, such as the generation of significant quantities of hydrogen peroxide by the autoxidation of pharmacological concentrations of ascorbate, changes in the metabolic activity, and stimulation of the enzymes that have a cofactor requirement for ascorbate. In addition, high dose ascorbic acid may improve the anti-cancer action of chemotherapeutic agents, boost immune cell functioning, and inhibit angiogenesis.

Many case studies demonstrated the effectiveness of intravenous vitamin C, with varying degrees of success. Clinically published IVC case studies report efficacy against a variety of cancers in humans, including pancreatic cancer, bone metastases accompanying breast cancer, non-Hodgkin's lymphoma, liver carcinoma, colon carcinoma, and ovarian cancer.

Several Phase I and Phase II clinical trials have been conducted in the last ten years to test safety and efficacy when IVC is used as an adjuvant with chemotherapy. The results of these trials confirm that IVC can be administered safely.

Most practitioners administer IV ascorbate to cancer patients by bolus infusions 2-3 times per week.

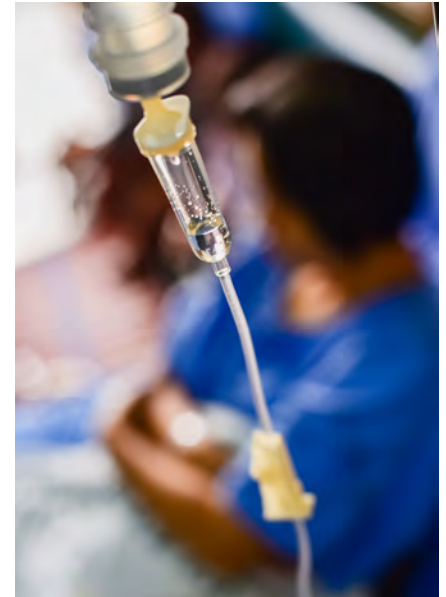
There have been two clinical trials that used continuous IVC infusions. Cameron and Pauling performed a clinical trial in 100 terminal cancer patients. The protocol included an initial 10 day course of IV ascorbate, at a relatively low daily dose of 10 g/day given by continuous infusions, followed by daily oral intakes of 10-30 g/day, in divided doses. Their results showed increased survival time

and improved the quality of life of the patients, compared with patients who had not received IVC. The ideas of Linus Pauling were extended in the model developed by Dr. Hickey. He described "The dynamic flow model" that proposes restoring human physiology by administering excess ascorbate, over and above the amount normally absorbed, spread throughout the day, so a consistent supply is achieved.

The second trial of the treatment of cancer patients by continuous infusions was conducted by Dr. Riordan. In this Phase I clinical trial, patients were administered continuous infusions using an infusion pump. In the Riordan Clinic trial, patients were treated by continuous infusion, which was administered over much longer periods of time than bolus intermittent treatments. For most patients the duration of the continuous infusion was at least 20 hours, as the duration of bolus infusion is from one hour to three hours, depending on the dosage.

The trial lasted eight weeks and involved terminal patients with poor prognosis. 24 subjects were given continuous IVC at doses between 150 and 710 mg/kg/day (10-50 grams per day). Most of the patients had colon cancer with liver and lung metastasis and three patients had pancreatic or liver cancer. All patients had several chemotherapy/radiation treatments before entering the study. 79% of the patients had a metastatic tumor.

In our recent publication, we analyzed previously unpublished parameters from this clinical study, including blood chemistry and blood count parameters that are reportedly related to patient prognosis and degree of inflammation. This included: absolute neutrophil and lymphocyte counts and the neutrophil-to-lymphocyte ratio; lactate dehydrogenase, an enzyme



CLINICALLY PUBLISHED IVC CASE STUDIES REPORT EFFICACY AGAINST A VARIETY OF CANCERS IN HUMANS

involved in tumor initiation, metastasis, and recurrence; creatinine, the depletion of which is associated with cachexia; and glucose, as hyperglycemia is common in cancer patients.

The most obvious effect of IVC therapy was to increase patient vitamin C levels. Consistent with other reports, the plasma ascorbate measurements conducted in this trial showed that vitamin C depletion in cancer patients is common. In fact, ten out of twenty-four subjects entered the trial with plasma ascorbate concentrations undetectable by the colorimetric ascorbate assay used at that time, with another four having ascorbate concentrations below the normal range. IVC infusion increased plasma levels to 1 mM. This likely replenished depleted tissue ascorbate stores as well.

As lymphocytes and neutrophils have important roles in tumorigenesis and carcinogenesis, we analyzed the effect of the treatment on these parameters. As the result of chemotherapy, neutrophil and lymphocyte counts typically decrease in cancer patients, with the effect being more severe for lymphocytes.

Analysis of white blood cell counts for patients in this trial indicated the potential for IVC to increase lymphocyte and neutrophil counts for patients in whom these numbers are below normal, while reducing neutrophil counts in patients for whom neutrophil counts are elevated.

It was particularly important for lymphocyte counts. Lymphopenia commonly occurs in cancer patients who had chemotherapy and high levels of oxidative stress induced by treatment, predicting a poor prognosis.

In our study population, about half of the patients who started intervention had lymphocyte counts lower than normal range. For patients with severe lymphopenia, who completed treatment, the median improvement in the lymphocyte count was 69%, and for all patients with lymphocyte levels lower than normal range the median improvement was 22%. These data proved that continuous IVC can improve immune function of cancer patients by increasing the level of lymphocytes, especially in patients with low lymphocyte count. Our data also indicated that lower doses are more favorable for the improvement of lymphocyte count.

As absolute neutrophil counts and neutrophil-to-lymphocyte (NLR) ratios are useful prognostic factors in a variety of cancers, with higher values of NLR indicating lower survival times, the effect of continuous infusion on these parameters was analyzed. For cancer patients in general, increased neutrophil counts are consistent with systemic inflammation, and a neutrophilic response is associated with poor prognosis, as it can inhibit the immune system by suppressing

the cytotoxic activity of T cells. For most of the patients, the tendency during treatment was for normalization of the neutrophil counts, i.e. improvement of neutrophil counts at the low level of this parameter and a decrease for the higher values.

The present analysis of neutrophil-to-lymphocyte ratios (NLR) also demonstrated the regulatory effect of IVC. NLR has been used to assess inflammatory response and has been suggested as a prognostic factor in a variety of cancers. In particular, cut-off values ranging between 2.0 and 4.0 were associated with a significant increase in all-cause mortality. As NLR may reflect the balance

between the activation of the inflammatory pathway and the anti-tumor immune function, elevated NLR due to neutrophilia is linked to accelerated tumor development.

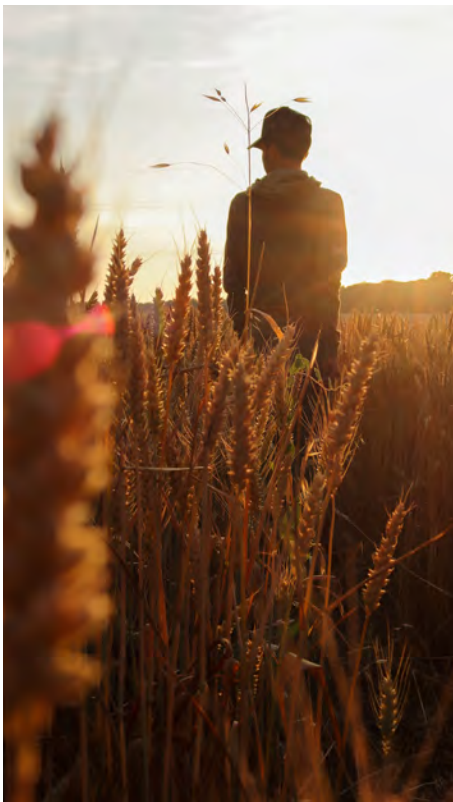
In the present study, most of the patients entered the trial with NLRs well above this cut-off. Continuous IVC therapy tended to decrease the rate of growth of NLR. Moreover, we were able to confirm the predictive potential of NLR. Our data demonstrated the relationship between the survival of patients and the rate of growth of NLR, as NLR increases correlated with lower survival times of the patients.

We examined the rate of change in this ratio (Δ NLR) for each patient before and after therapy. The comparison of the trend in the change of NLR measured for periods one week before treatment and during treatment demonstrated that the rate of change was decreased. This suggests that IVC may

reduce NLR levels, thus improving prognosis. Since the rate of increase in NLR for patients with initially elevated values decreased during IVC therapy, ascorbate may be decreasing inflammation in these subjects.

As activation of glycolytic metabolism is a significant characteristic of tumor cells, and since lactate dehydrogenase (LDH) is an important coenzyme in glycolysis, elevated levels of serum lactate dehydrogenase may be useful prognostic biomarkers. Lactate dehydrogenase is elevated in many types of cancers; it has been linked to tumor growth, maintenance and invasion.

The rate of increase of LDH was calculated before and after treatment. The value of this parameter (LDH rate of growth) was decreased in 38% of the patients, increased in 28.6%, and was not changed in 33.4% of patients. The result that LDH decreased in 38% of the subjects is remarkable, considering their illness. The median survival time for the all participants with initial LDH higher than normal range (LDH>245 U/L) was 95 days. In contrast, the median survival time for all subjects with normal initial LDH values was 173 days.



Hyperglycemia is another prognostic factor in cancer patients. It is common in cancer patients and represents a challenge during therapy. For example, about 70% of pancreatic cancer patients have impaired glucose tolerance. Moreover, there is a link between the lowering of blood glucose concentration and remission of malignancy. In one study, patients under insulin coma therapy for six months (for psychosis) were reported to become free of large tumor burdens considered incurable by their oncologists.



Hyperglycemia was common in our cancer patients. Two thirds of the patients in our study had above normal blood glucose concentrations. There were changes in blood glucose during IVC therapy. Blood glucose levels were decreased for patients with the concentrations higher than normal range during IVC therapy.

Several clinical trials have established that IVC can be administered safely. In the continuous IVC infusion trial, from which data for the present analysis were obtained, side effects were mostly minor, and the criterion for stopping the clinical trial (two or more Grade 3 or higher adverse events at a given dose at least possibly related to the treatment) was never reached. Briefly, blood chemistry parameters that serve as indicators of renal function (BUN, creatinine, and uric acid) remained relatively stable, or, in the case of uric acid, decreased during therapy. Only four subjects experienced BUN increases during therapy.

The most common side effects were nausea (11 subjects), injector port occlusion (10 subjects), dry skin or mouth (7 subjects), edema (7 subjects) and fatigue (6 subjects). These were generally minor (Grade 1). Most of the Grade 3 events involved hypokalemia, which is considered possibly related to the ascorbate therapy.

In summary, the present analysis demonstrated the regulatory and normalizing effect of continuous IVC infusions on lymphopenia, neutrophil-to-lymphocyte ratios, and absolute neutrophil counts. Despite the very poor health status of patients, continuous IVC treatment had positive effects on the important parameter that characterized tumor metabolism (lactate dehydrogenase) and blood glucose concentration.

Reference

Nina Mikirova, Joseph Casciari, Ronald Hunninghake. Continuous intravenous vitamin C in the cancer treatment: reevaluation of a Phase I clinical study. *Functional Foods in Health and Disease* 2019; 9(3): 180-204.

KNOW YOUR OILS:

Lemon Essential Oil



History

- Used for over 1000 years
- Native to Asia
- English sailors would use lemons while at sea to protect themselves from scurvy and conditions caused by bacterial infections.

Benefits

- Relieves nausea
- Improves digestion
- Nourishes skin
- Lymphatic drainage
- Fights bacterial and fungal infections
- Rejuvenates energy
- Source of vitamin C

Uses

Natural Disinfectant

40 drops lemon
20 drops Tea Tree oil
1/4 c. white vinegar
Add all ingredients to a 16 oz spray bottle and fill with water

Diffuse

5 drops to lift mood and fight feelings of depression

Freshen

5 drops to laundry detergent or wool dryer balls for naturally fresh laundry
5-10 drops with water in spray bottle for room freshener

Hydration

Add 1-2 drops in water first thing in the morning to 8-10 ounces of purified water help keep you hydrated and promote weight loss*

* make sure when using internally that it is therapeutic grade



Jocelyn Pickard is a dedicated volunteer at the Riordan Clinic. Her health journey led her to essential oils 17 years ago. She is an avid learner and has extensive knowledge and training in how to incorporate essential oils into your daily life.

✉ josdugpickard@gmail.com

📷 @jospickard



September 9 - 13

CHECK YOUR HEALTH

All Supplements **25% OFF**

Select Lab Profiles **35% OFF**

VISIT ONE OF OUR THREE LOCATIONS:

WICHITA | **HAYS** | **OVERLAND PARK**

Find location and store hours at
riordanclinic.org/our-locations

ONLINE CODE: **CYH0919**

800.447.7276 | STORE.RIORDANCLINIC.ORG

Upcoming Events

For more information or to register for any of these events, please visit RiordanClinic.org/events or call 316.682.3100

Vitamins and Nutrients in Food

Wednesday, August 7th

11:30 am – 1:00 pm @ Wichita Campus

Anne Zauderer, DC

Cost: **FREE**

Most people have heard the term “superfood.” This is a food that has great nutritional value. What makes these foods so great? What types of nutrients are in these foods and what do those nutrients do for our bodies? In addition, there are foods like sugar that, in addition to making us gain fat and dysregulating our blood sugar, actually rob the body of these essential nutrients. In this class we will discuss the best foods to eat for the maximum nutritional value.

Food as Medicine

Wednesday, September 4th

11:30 am – 1:00 pm @ Wichita Campus

Anne Zauderer, DC

Cost: **FREE**

This in-depth course will connect all of the classes in the series and address some fundamental questions behind how our diet impacts our health and well-being and how it contributes to the progression of chronic disease.

Congratulations!



**DIRECTOR OF CLINICAL SERVICES,
CHRIS BRANNON**

2019 Health Care Hero in the Field of Nursing

The Health Care Heroes were named by the Wichita Business Journal, along with the University of Kansas School of Medicine in Wichita, the Wichita State University College of Health Professionals, and Wesley Healthcare and Medical Provider Resources.

As the Director of Clinical Services, Chris:

- Oversees and trains the Nurses, Medical Assistants, and Phlebotomists in all three Riordan Clinic locations.
- Works together closely with the medical providers to develop and implement our IV Nutrient treatment protocols.
- Researches and achieves compliance with the FDA regulations for compounding medications.
- Assists doctors and medical providers around the world in answering their questions to further their training on the Riordan IV Vitamin C protocol.
- Trains visiting nurses and medical providers on administering IV Vitamin C.
- Oversees over 5,000 Vitamin C infusions per year across the three clinics.
- Sources high quality, reliable, suppliers for both the nutrients and supplies used in treatment therapies.
- Provides leadership to help grow the overall Riordan Clinic approach to achieving Real Health.

Contact the Editor

Please send any comments or suggestions to
newseditor@riordanclinic.org



Dr. Anne Zauderer
Editor

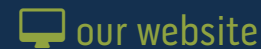
Connect with Us



facebook.com/riordanclinic



youtube.com/user/healthhunter1



riordanclinic.org



Join our mailing list to receive this monthly newsletter **FREE**.

To sign up, go to
riordanclinic.org or email us at information@riordanclinic.org

For more information or to register for any of these events, please visit RiordanClinic.org/events or call 316.682.3100

Upcoming Events

IVC Academy

October 3-5 @ Wichita Campus

11 CMEs Available | Limited to 60 participants

Cost: \$495 discounted price

The Riordan IVC Protocol for Cancer is well known in the integrative and orthomolecular medicine community and is commonly used as an effective adjunct to conventional oncologic therapy. IVC Academy is the perfect opportunity to step away from your daily schedule and focus on learning how to implement or strengthen the use of IVC in your practice. Learn from the experts who helped research, develop, teach, and use the IVC Protocol every day.

Learn more at ivcandcancer.org



Riordan Clinic on Youtube

View all of our previously recorded lectures at
youtube.com/user/healthhunter1

#ichooserealhealth

RIORDANCLINIC.ORG/REAL-HEALTH

SABRINA SAULS

What Real Health Means To Me

For me real health is mind, body, and soul health. I believe that my mental health is the most important to me.

Struggling with anxiety and depression had taken over my body's health in so many ways. The older I got the more and more I was anxious about everything. Riding in the car, driving, or just leaving the house in general. Being scared of the outside world really took a toll on my health. I felt sick all the time, could barely get out of bed, gained weight, and it was starting to affect my relationships. I was alive, but I wasn't living.

I started working at the Riordan Clinic in February of 2018, and functional medicine was completely new to me. I had my nutritional labs done, and they were horrible for a 24-year old. I could not believe how out of control my weight and overall health had gotten.

I immediately saw Dr. Anne and went over my labs, and she got me on a supplement plan. It was really hard for me to start a new way of living, after getting stuck in a routine of eating out and sitting on the couch, not to mention being a ball of anxiety, and being depressed

about the way I looked. I began eating colorful vegetables, taking vitamins that were recommended for me, and getting an exercise routine down. By doing all these things I started to feel "normal" again, or rather, healthy. I am not nearly as anxious anymore

about anything, I have lost a significant amount of weight, and I like to work out. I used to have to take a nap on my lunch break, and then again after work at six o'clock. Then I would go to bed at nine or ten. My meals would consist of take out or whatever meal was easiest out of the box at home. I needed the most simplicity in my life because I was so tired, due to missing or really low levels of many nutrients.



As many people at the Riordan Clinic know, taking massive quantities of vitamins is extremely hard to get used to after not taking any your whole life (as in my case). After taking them for over a year now, I see a dramatic difference in how I feel, and it's been a big part of my losing weight, too.

Real health to me means taking care of the body and mind that you have, because you only get one. So you need to take care of it while you can, so you can live a long and healthy life.

Discounted Pricing
Ends September 1st!

IVC
ACADEMY

OCTOBER 3-5

Riordan Clinic @ Wichita, KS

LEARN MORE AT IVCANDCANCER.ORG