Microscopic Colitis Foundation

MICROSCOPIC COLITIS NEWSLETTER

October 1, 2016 Volume 2 Issue 1

Foundation News

The Microscopic Colitis Foundation has welcomed two new board members. Rosalyn Upson, Ph.D, took over the role as secretary for the foundation. She will also be acting as grant manager. Rosalyn brings a wealth of knowledge as a biologist involved in research at several universities and biotech companies. In addition, Holly Webber joins the Microscopic Colitis Foundation with a background in sales and marketing. We give a hearty welcome to both new board members! For more information, please see the "About Us" section on the website.

For your financial contribution to the Microscopic Colitis Foundation

Will Marijuana Ever Be a Valid Treatment Option for IBD Patients?

Roughly 10-15 years ago, a surprising amount of research was being devoted to studying the effectiveness of cannabis compounds for treating inflammatory bowel disease (IBD). Most people are familiar with the psychotropic (mood-altering) effects commonly associated with conventional marijuana use. And it's been known for centuries that cannabis and some of its derivatives are capable of treating various digestive system disorders.

Receptor subtypes may separate mood-altering effects from therapeutic effects.

Only recently have the cannabinoid (CB) receptors actually been identified. Researchers have established that the CB1 and CB2 receptors are part of a system

known as the endocannabinoid system.1,2 These receptors (CB1 and CB2) are activated by endocannabinoids produced by the body.3 They also respond to cannabis compounds. Researchers have found that activation of the CB1 receptor is responsible for the psychotropic effects that are commonly associated with the conventional (recreational) use of cannabis. And research has confirmed that activation of the CB1 receptor also reduces motility in the gut (which is important for treating diarrhea) and regulates the immune system to help reduce inflammation.4

But unlike CB1 receptors, which are present in significant quantities in normal intestinal tissue, CB2 receptors seem to be few and far between in normal GI tracts, so they appear to have little or no significance there. But Wright et al. (2005) found that CB2 receptors are present in much larger numbers in the intestinal mucosa (the intestinal lining) of IBD patients, especially in cells adjacent to lesions associated with IBD, suggesting that they may play an important role in regulating immune system responses associated with IBD.5 And more importantly, additional research has verified that activation of the CB2 receptor can be utilized to downregulate immune system responses without provoking a psychotropic effect.6 In other words, a specific type of cannabis derivative might be used to suppress IBD symptoms without triggering the mood-altering effects commonly associated with marijuana.

Why is pain so persistent in some IBD cases?

An excellent research article published by Azpiroz et al. (2007) describes why gastrointestinal tract hypersensitivity is a common problem associated with various functional gastrointestinal disorders (FGIDs), and how inflammation leads to hypersensitivity in (FGIDs).7 Furthermore, the article discusses why many patients continue to suffer from abdominal pain and other symptoms even when their disease is technically in remission (by the medical definition of remission, based on the absence of diagnostic markers). According to Azpiroz et al. (2007), damage to specialized cells found in the epithelial lining of the intestines such as Paneth cells and enterochromaffin cells (ECs) may persist for many years after the onset of remission of the FGID that was the cause of the damage.

Paneth cells help balance gut bacteria populations.

To comprehend the full implications of this, we need to understand a bit about the function of these cells and and their important roles in the regulation and performance of the digestive system. Paneth cells perform several vital functions in the small intestine. One of the more important functions of Paneth cells is to produce and secrete peptides and proteins that have antibiotic properties and the ability to prevent further microbe growth.8 It's known that these antimicrobial secretions play a vital role in maintaining a balance with gut bacteria in addition to providing protection from invading pathogens. IBDs are associated with disrupted Paneth cell functioning.

Enterochromaffin cells produce serotonin.

Enterochromaffin cells found in the small intestine are endocrine cells that produce and secrete approximately 9095 % of the body's supply of serotonin. The rate at which serotonin is released by enterochromaffin cells regulates gut motility, and it can also promote issues such as vomiting, diarrhea, and the symptoms of the syndrome known as IBS.9 As Camilleri (2009) points out, too much serotonin promotes diarrhea, while too little can cause constipation.10 Furthermore, these actions are accomplished when serotonin binds to its receptors, known as 5 hydroxytryptomine receptors (or simply 5-HT receptors). Diarrhea is associated with an increase in blood plasma levels of 5-HT,

and constipation is associated with a reduction of plasma levels of 5-HT.

Azpiroz et al. (2007) also noted that damage (and therefore, hypersensitivity) may persist for years in intestinal muscle tissue, and in certain cells in the enteric nervous system. The enteric nervous system, sometimes referred to as the "second brain", controls digestive system functioning. This discovery (that incomplete healing persists in certain parts of the GI tract and enteric nervous system) is not a surprising observation, since the mechanism responsible for perpetuating IBDs in the first place is based on a failure of damaged intestinal cells to heal (Persky, 2012, p 226).11

D'Argenio et al. (2006) showed that when inflamed biopsy tissue from the colon of ulcerative colitis patients was treated with 5-amino-salicylic acid (5-ASA), commonly known as mesalamine, to control inflammation, the levels of anandamide (an endocannabinoid naturally produced by the body) were elevated in the biopsy samples.12 This suggests that activation of the cannabinoid receptors (by means of a cannabis derivative) offers a possible treatment option.

And in subsequent research, D'Argenio et al. (2007) verified that a similar effect occurs with celiac patients.13 In celiac patients, anandamide levels peak with villus atrophy, and decline with remission.

So now we can understand why IBD symptoms can be so persistent (in some cases, even after diagnostic markers of an IBD are no longer present). And we can see why the use of certain cannabis derivatives might be useful for controlling not only the pain and inflammation associated with IBDs and FGIDs, but also the functional disruptions such as motility issues caused by serotonin dysregulation.

Current use of marijuana for medical purposes is relatively low.
A survey of 292 IBD patients in 2013 showed that slightly over 12 % were users, 39 % had used marijuana in the past, and almost 49 % had never used the drug.14 But only slightly over 16 % of the users and past users had used marijuana to treat disease symptoms. That's only 8.4 % of the total number of IBD patients in the study. But those few users described the treatment as "very helpful"for relieving symptoms. The survey also showed that about half of the subjects who had never used marijuana would be interested in trying it if it were legal to do so.

The future appears uncertain.
Despite earlier progress, the outlook remains cloudy at best, and dismal at worst, due to the uncertainty caused by a complex assortment of state laws regulating (or deregulating) cannabis for both recreational and medical purposes, and the continued refusal of national governments to deregulate the drug. After the spurt of research activity described above, scientifically-valid, controlled trials large enough to be considered capable of providing convincing medical evidence were never done. Further research seems to be on indefinite hold. So valid, scientific proof that cannabis can be used effectively to treat IBD does not exist in published, peer-reviewed medical journals. And until it does, there can be no official medically support for it.

Some insight into the problem can be gained from the Gastrointestinal Society - Canadian Society of Intestinal Research website. While the use of marijuana for medical purposes is legal in Canada, and polls show that about 66 % of Canadians support legalization of marijuana for all purposes, a few years ago the Canadian

government changed the rules by which physicians can administer the use of medical marijuana.15 Instead of physicians simply being able to recommend a patient for the Medical Marijuana Access Program, now they must write prescriptions for patients to use the drug. This places physicians in the uncomfortable position of being expected to write prescriptions for a drug for which no medically-approved treatment information regarding dosage or various other details exists. So not surprisingly, they want to see some data on which to base their prescriptions.

But a pharmaceutical company in California may be a game-changer.
Vitality Biopharma has developed what they refer to as cannabosides, which are actually cannabis-derived cannabinoid prodrugs.16 Unlike conventional drugs, prodrugs only become active in the body after they are either metabolized by chemical processes in the digestive system or (in the case of some prodrugs, such as sulfasalazine, for example) broken down by bacteria in the gut. The company hopes that some of the prodrugs it has patented will be able to provide relief for IBD patients while minimizing the problem of sending psychoactive tetrahydrocannabinol (THC) to the brain.

The bottom line here is that the pharmaceutical industry is finally figuring out ways to make money from cannabis-derived drugs, and that means that a lot of money will be devoted to promoting the products. As long as cannabis-associated treatments were cheap, the drug companies had no interest, and so the odds of getting bills through Congress to expedite the use of such drugs were very low. But with pharmaceutical industry money promoting these particular products, the odds are significantly better that legislation will be much more favorable in the future.

Conclusions
So despite a substantial amount of fairly recent research that suggests that cannabis could potentially be successfully used to treat some or all of the symptoms of IBDs, plus user reports verifying that cannibis helped to relieve their symptoms, without published scientific proof, many doctors are reluctant to risk prescribing such treatments. But if Vitality Biopharma can get FDA approval for their products, physician attitudes will change when the drug company reps begin to make their rounds to discuss the merits of these products with them.

And current government policies on cannabis-associated treatments, ranging from the complex assortment of state laws to the generally-pessimistic prevailing attitude of many national governments, will also surely change after the pharmaceutical companies step in. So to answer the question asked at the beginning of this article (Will marijuana ever be a valid treatment option for IBD patients?) probably, but it will almost surely be in the form of overpriced cannibis-based prescription drugs, now that the pharmaceutical industry has figured out how to make money from what was previously a relatively inexpensive treatment option.

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What to Eat During a Flare

Knowing what to eat can be daunting when dealing with a flare. While a healing diet proves to be unique to each individual, many foods will usually worsen flare symptoms for most people. Typically, trial and error is required to establish an eating plan. However, here are some recommendations to get started.

In the first stages of calming a flare-up, it's best to eat a bland well-cooked diet. Gluten and dairy are known triggers and should be eliminated. Many well-known medical establishments now endorse a gluten and dairy-free diet for treatment of Microscopic Colitis. Keep grains to a minimum, with the exception of white rice (preferably Jasmine rice) in moderation. Instead of high-fiber foods, choose animal protein and mushy

Vitamin E and Soy Sensitivity

For those who are sensitive to soy, vitamin E presents some real challenges due to ambiguous labeling and confusion caused by industry "experts" who mistakenly do not recognize soy oil, soy lecithin, and other derivatives of soy as a source of antigens for people who are sensitive to soy. As a result, most products that contain vitamin E derived from soy will not contain an allergy warning on the label. They are often incorrectly labeled as "Soy-Free". For some people who are sensitive to soy this may be a non-issue (because their sensitivity threshold to soy is outside the range of the reaction potential typically imposed by products containing such ingredients). For others it can be a serious immune system issue, and for these individuals, a working

tolerable vegetable such as carrots, squash and sweet potato. Many can safely eat potatoes. Always try to stay away from processed foods, as these pose multiple issues for the gut. Bone broth is an excellent choice to promote gut healing and provides necessary nutrients. It can be made in large batches and frozen.

Easy Bone Broth

Ingredients:
3-4 lbs beef bones
1 medium onion
2 carrots
2 celery stalks
1 bay leaf
2 tablespoons apple cider vinegar with the mother
Salt

Directions:

1. Place bones into a 6 quart or larger crock pot.

2. Peel carrots, break each carrot in half and place into crock pot.

3. Rinse celery, break each celery stalk in half and place into crock pot.

4. Peel the onion's outer later, slice onion in half and place into cock pot.

5. Put 1 bay leaf into crock pot.

6. Fill crock pot with water to the rim of the crock pot.

7. Add 2 tablespoons of apple cider vinegar with the mother to the crock pot.

8. Set crock pot on low for 11 hours.

9. Turn off crock pot after 11 hours and scoop out the contents (bones and vegetables).

10. Once cooled salt to taste (if desired) and then strain while transferring broth to containers.

11. Let broth cool in refrigerator for 24 hours.

knowledge of the details involved can be very useful for helping to prevent unanticipated reactions.

The following article is reprinted by permission from the Microscopic Colitis Discussion and Support Forum.

The Problem With Vitamin E

Vitamin E can be found listed on labels in various forms, including d-alpha tocopherol, dl-tocopherol, alpha tocopherol acetate, mixed tocotrienols, tocopheryl acetate, and vitamin E succinate. Most of these (other than the first 2) are very ambiguous terms. Hopefully this article will shed some light on this often-confusing subject.

Natural vitamin E (in food) occurs in eight different chemical forms, called isomers:

alpha tocopherol
beta tocopherol
delta tocopherol
gamma tocopherol
alpha tocotrienol
beta tocotrienol
delta tocotrienol
gamma tocotrienol

Note that the first 4 are tocopherols, while the other 4 are tocotrienols. It's generally acknowledged that only alpha tocopherol meets the needs for human nutrition. So supplements that contain natural vitamin E typically only contain alpha tocopherol, and this is designated on labels as d-alpha-tocopherol. Unfortunately most of those supplements are derived form soy oil because of its relatively low price.

But about 99 % of the vitamin E supplements that are available, use synthetic alpha-tocopherol, designated as dl-alpha-tocopherol. Research shows that most synthetic vitamin E supplements are very poorly absorbed, so most health advocates shy away from synthetic vitamin E supplements. Synthetic forms of vitamin E are only about half as effective as natural

12. After 24 hours, remove the thick hardened layer of fat at the top.

13. Refrigerate for 4 days or freeze for 4 months.

14. Heat and enjoy!

For more information on treatment by diet, see our updated website diet section at Using Diet Changes

Chamomile Tea as a Sleep Aid

Sleep issues can be a common problem for individuals with Microscopic Colitis. While prescription medications are always an option, it is worthwhile to explore natural sleep aide alternatives. Known for centuries for its medicinal properties, chamomile also helps provide a better quality of sleep. Studies have demonstrated that chamomile tea induces mild sedation and its beneficial effects increase over time. Researchers theorize that flavonoids in the chamomile bind to receptors in the brain to produce a sedative effect.

Contrary to popular belief, chamomile can be brewed using fresh, frozen or dried flowers. It's best to get quality whole chamomile, as bagged chamomile tea may not have the same effect. Bagged tea is generally of lower quality, may not contain enough flowers to be effective and can

forms of vitamin E. And unfortunately, virtually all vitamin E supplements (whether natural or synthetic) contain only a single isomer of vitamin E (based on alpha tocopherol).

But research shows that gamma tocopherol is the most common isomer found in food. In fact, roughly 70 % of the vitamin E found naturally in food is in the form of gamma tocopherol. That predominance in itself suggests that totally ignoring this isomer in vitamin E supplements is probably counterproductive. It's certainly counterintuitive at the very least. Why is this important? Because when only alpha tocopherol is supplemented, this tends to significantly deplete gamma tocopherol levels in the body. Gamma tocopherol is needed by the body in order to reduce inflammation and regulate certain factors that protect against certain diseases (including certain cancers). Gamma tocopherol is also known to activate genes that protect against Alzheimer's disease.

So clearly, virtually all vitamin E supplements (whether natural or synthetic) are contraindicated for the prevention of certain diseases, including cancer and Alzheimer's, simply because they exclude gamma tocopherol, and because of that shortcoming, they tend to deplete existing supplies of gamma tocopherol in the body.

The obvious goal should be to try to get vitamin E from food, not from supplements, and not from processed foods that are enriched with vitamin E in the form of various tocopherols.

Vitamin E is available in various foods, including almonds, sunflower seeds and oil, safflower oil, olive oil, spinach and other dark green leafy vegetables, broccoli, squash, shellfish, many fish, avocados, and certain fruits and berries. Most MC patients can tolerate many of those foods, so they shouldn't need supplemental vitamin E. And of course vitamin E is also available in peanuts and soybean oil, and in tomatoes, but most MC patients find it necessary to avoid those 3 foods.

include other fillers to bulk up the product while lowering cost for the manufacturer.

To brew a cup of chamomile tea, pour 1 cup of boiling water over 2-3 teaspoons of dried flower and steep for 10-15 minutes. If using fresh flowers, pour 1 cup of boiling water over 8-10 fresh flowers and steep for 5-10 minutes.

Be sure to check with your doctor before drinking chamomile tea due to possible interactions with prescription medications.

German chamomile

Chamomile Tea

Chamomile, Insomnia, and Depression

Chamomile: Herbal Medicine

Upcoming days worth noting

Wednesday, November 2nd, 2016 is

Stress awareness day

Sunday, November 13th is

World kindness day

Monday, November 14th is

Loosen up, lighten up day

Saturday, December 17th is

Maple syrup day

Friday, December 30th is

Bacon day

But most MC patients are not as concerned about getting enough vitamin E from food as they are concerned about accidentally ingesting a form of tocopherol derived from soy. Far too many processed foods are "enriched" with some form of vitamin E, and the trick is to figure out which form is used, to determine whether or not it's safe. A "Soy-Free" banner on the label of the product cannot be trusted because most product label designers do not recognize natural forms of tocopherols as a derivative of soy.

When natural forms of vitamin E are used (d-tocopherol), unless the source of the ingredient is specified otherwise, it's safest and usually most accurate to assume that the source is soy (because that's what it's usually made from). When the type of vitamin E is listed on the label as dl-alpha-tocopherol, or as synthetic vitamin E, then it does not contain any soy derivatives.

"Extracts" should also be viewed with suspicion because in some cases the extraction medium used is soy oil. A good example of this is the rosemary extract found in many processed turkeys these days. Pure rosemary should be safe for most microscopic colitis patients, but rosemary extract may cause problems for those who are sensitive to soy.

Vitamin E can be a confusing issue for those who are sensitive to soy. Avoiding all "natural" forms of vitamin E, such as d-alpha tocopherol, alpha tocopherol acetate, mixed tocotrienols, tocopheryl acetate, and vitamin E succinate should minimize the chances of a reaction. Only dl-tocopherol, which is the synthetic version, is not associated with soy.

Microscopic Colitis Support Forum

Newsletter Suggestions and Article Submissions