Colorectal Cancer Awareness 2010

Guest Expert: Edward Chu, MD
Deputy Director and Chief of Medical Oncology, Yale Cancer Center

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Welcome to Yale Cancer Center Answers with Drs. Ed Chu and Francine Foss, I am Bruce Barber. Dr. Chu is Deputy Director and Chief of Medical Oncology at Yale Cancer Center and Dr. Foss is a Professor of Medical Oncology and Dermatology specializing in the treatment of lymphomas. If you would like to join the conversation you can contact the doctors directly. The address is canceranswers@yale.edu and the phone number is 1888-234-4YCC. This evening Francine welcomes her co-host Dr. Ed Chu for a conversation about colorectal cancer. Here is Francine Foss.

Foss In recognition of this being Colorectal Cancer Awareness Month, I would like to talk to you a little bit about your experience, and your role as a colon cancer physician. It’s great to have you here today to be interviewed.

Chu Francine, it’s great to be interviewed by you, especially since March is Colorectal Cancer Awareness Month. I think the important message we want to send to our listeners out there is that it really is important for those of you who are age 50 and above with no family history of colon cancer to undergo screening and early detection because we know that screening and early detection can save lives.

Foss Ed, you have been interested in colon cancer pretty much your whole career, can you take us back and tell us what first got you interested in colon cancer?

Chu I think it’s probably a combination of genetics and environment Francine, as you know both my parents were cancer researchers. They actually started their careers here at Yale and then moved on to become the founding members of the Brown Cancer Center in Providence, Rhode Island. Their focus was on the pre-clinical studies of trying to identify new agents to treat colon cancer and when I was an undergraduate in college, a medical student, in residency, and then in fellowship at the National Cancer Institute, my own research also focused on colon cancer. I guess I have been involved in the field for quite some time. I don’t know how much this impacted on my decision to focus on colon cancer, but there are a couple of family members both on my mom’s side, who unfortunately developed colon cancer at somewhat of a young age.

Foss Certainly that can impact your interest in trying to research this disease.

Chu Yes, I am sure it must have played some factor.

Foss Can you go back for our audience and define colon cancer? People think about the intestines and the colon, can you delineate for us the whole system of the intestines and what colon cancer is?

Chu The GI tract, the gastrointestinal tract, starts from the mouth and goes all the way to the anal region. Colon cancer actually involves the large bowel, which is kind of the lower part of the

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entire gastrointestinal tract. As we now are appreciating, there are a lot of connections, physical connections, between the small bowel of the GI tract and the large bowel of the GI tract and so I think when we talk about colon cancer, if there is the development of colon cancer, one also has to worry about the possibility of cancer spreading from the colon to the small bowel.

Foss  How common is colon cancer?

Chu  Actually it is quite common, and it remains a pretty significant public health problem both here in the United States and worldwide. In the US there will be an estimated 147,000 to 148,000 new cases diagnosed, and there will be almost 50,000 deaths each year in the United States attributed to colorectal cancer. To bring it closer to home, here in the State of Connecticut in 2010, there will be an estimated 2,000 new cases diagnosed.

Foss  Colon cancer, according to the SEER data, is the third most common cancer now in the United States.

Chu  Yes, for both males and females it’s the number three cause of cancer, but if you look at cancer related mortality, cancer related deaths, it’s actually number two.

Foss  What's the average age of a patient when they are diagnosed with colon cancer?

Chu  If you look at all comers, the median average typically is 60 to 65, more than 90%, perhaps as much as 95%, of all the colon cancers that are diagnosed are diagnosed above the age of 50. Again, that's why the screening recommendations for average risk individuals start at age 50.

Foss  Let’s talk a little bit about risks for colon cancer.

Chu  We always think about family history and people tend to focus on family history as being the number one cause, but again, if you look at all of the causes of colon cancer the number one risk factor is age, and again, age greater than 50. Beyond age there are some other risk factors. Interestingly enough, African American individuals seem to develop cancer at an earlier age, and also seem to have a more aggressive form of colon cancer when it’s diagnosed. We know that there are certain lifestyle factors that are associated with an increased risk for developing colon cancer, so if an individual is not very active physically, is sedentary, or if someone is obese or overweight, as well as an individual that smokes or drinks more than a moderate amount of alcohol, that places one at risk. Then there are dietary issues, so a diet that’s rich in red meat, high animal fat content, and low in fruits, fibers and vegetables, can place one at increased risk. But even with all of that I want to emphasize for our listeners out there that age greater than 50 is by far and away the number one risk factor for developing colon cancer.

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There has been some talk about calcium and vitamin D in association with colon cancer or prevention of colon cancer, can you touch on that a little bit?

It’s interesting, there are some lifestyle factors that can help to reduce the risk of colon cancer and it seems that folic acid supplementation as well as calcium and/or vitamin D supplementation does seem to reduce the risk. Similarly, if one takes aspirin or non-steroidals there seems to be a reduced risk of an individual who has underlying polyps, which we know now is really the main cause for someone to develop colon cancer. So aspirin, non-steroidals, and perhaps folic acid, vitamin B12, vitamin D and calcium, may be able to reduce the risk of polyps transforming into true colon cancer.

So should the average individual listening to us today start taking these vitamin supplements or are there certain people who are at higher risk? You mentioned somebody that already had polyps, but what about the average person who doesn’t know whether they have polyps?

It’s a great question, and that’s obviously something that has to be discussed with a primary care physician, general internist, or gastroenterologist. The data is still not overwhelmingly convincing, it’s interesting, but there have not been definitive tests to confirm one way or the other. Certainly it’s not unreasonable for someone to take a multivitamin each day of folic acid, a 1 mg pill a day and some calcium and vitamin D, because not only does it help for colon cancer, it can be helpful for general well being.

What about the issue of genes and colon cancer? Is there a specific genetic mutation that’s associated with colon cancer?

There clearly is a family history and a genetic risk for developing colon cancer. If there is a family history of colon cancer, say for instance an uncle, aunt, or sibling, just that fact can increase the risk for someone to develop colon cancer by two to four fold. But as you mentioned, there also are some familial genetic predispositions for developing colon cancer, perhaps the one that’s most well known is the so-called Lynch syndrome I and/or II, also known as hereditary nonpolyposis colorectal cancer syndrome. Lynch syndrome I is a familial syndrome of colon cancer usually developing at a very early age, somewhere in the 20s and 30s and it’s only colon cancer. Lynch syndrome II is colon cancer, but also a number of associated cancers, and it’s interesting because they really are completely unrelated to colon cancer. In women there is an increased risk to develop endometrial cancer and ovarian cancer, and in both men and women there is an increased risk for developing stomach cancer as well as cancers of the kidney region.

When an average individual develops colon cancer should they seek out genetic testing or only under the circumstances where they have other family members with the disease?
To put it into perspective, about 85% of all colon cancers are what's called sporadic. Meaning there is no familial genetic predisposition. The rest, 10% to 15% of cases, are in fact a familial genetic syndrome. I think only in those situations would one consider genetic counseling. Maybe the best piece of advice is if there is an individual or family member who develops colon cancer at say age 30 or maybe even early 40s, and there may be other cancers that have developed in that family history, then perhaps it would be important to seek attention and go see a genetic counselor.

Can we switch gears now and talk about the signs and symptoms of colon cancer.

The typical symptoms associated with colon cancer can be malaise, fatigue, generalized weakness, loss of appetite, loss of taste for food, weight loss, and there can also be associative abdominal pain, cramps, change in the size or caliber of stools, as well as a change in the color of the stools. Obviously if one sees any specs of blood that’s a concern, also if the stool becomes a black tarry color in consistency, that's of concern. What also is important to emphasize is that a good majority of the patients that we see in the clinic will actually never have any symptoms at all. I think a common misconception out there is that screening and early detection are not necessary unless one has already developed symptoms and again, our experience here at Yale has been that a good number of the patients we see will have absolutely no symptoms when they present.

What are the screening processes for colon cancer?

The general recommendation is again to have screening once one hits the age of 50 unless there is a strong family history of colon cancer. There are multiple screening methods that are used, one is called a fecal occult blood test and that's where a stool sample is checked for the presence of blood. You may not actually see the red blood, but if you test it you can detect the presence of what's called occult blood. In the old days, sigmoidoscopy was strongly favored as a screening modality, but the NIH actually had a State of the Science Conference last week, I guess in preparation for Colorectal Cancer Awareness Month, and over the last ten years the use of sigmoidoscopy has dramatically fallen off in favor of what many of us, including myself, believe is the gold standard for screening and that's colonoscopy.

Can you talk about colonoscopy, the procedure itself, and the risks of the procedure? Is it painful? And also the whole topic of virtual colonoscopy as well.

Sure and it’s very relevant to our discussion today. Colonoscopy is basically a procedure where a tube that has a light attached to it is passed through the anal rectal region and it can visualize the entire large bowel or colon of an individual. It does require preparation, so the day before one has to either drink a large amount of fluid, which I actually think has been mis-termed, called GoLYTELY and you have to drink like two litres of the stuff. Your belly gets bloated and then
about two hours after you drink this GoLYTELY it basically purges your entire colon. I know this procedure quite well because yours truly has had four colonoscopies since I was age 28 and the first couple of times I used this GoLYTELY and it was not very pleasant at all. More recently, they have developed a pill called the Fleet Phospho-Soda pill and I have to say that's much, much easier to take and gives you the same result and cleans out the entire large bowel.

Foss: What about virtual colonoscopy?

Chu: Virtual colonoscopy is basically a very sophisticated CAT scan of the belly and again, very sophisticated radiology suites that are available now really at all of the major hospitals, then take 3D images and so one of the advantages of virtual colonoscopy is that you don’t have to undergo an invasive procedure, it doesn’t require sedation in contrast to colonoscopy, and obviously one of the risks, all be it a very-very rare risk, is colonoscopy can be associated with perforation of the bowel.

Foss: Let’s talk a little bit about that when we come back from our break. You are here listening to Yale Cancer Answers and I have my co-host here Dr. Ed Chu who is talking to us today about colorectal cancer.

Medical Minute: It’s estimated that over 2 million men in the US are currently living with prostate cancer. It’s a matter of fact that one in six American men will develop prostate cancer in the course of his lifetime. The good news is that major advances in the detection and treatment of prostate cancer have dramatically decreased the number of men who die from this disease. Screening for prostate cancer can be performed quickly and easily in a physician’s office using two simple tests; a physical exam and a blood test. Clinical trials are currently underway at federally designated comprehensive cancer centers like the one at Yale to test innovative new treatments for prostate cancer. The patients enrolled in these trials are given access to experimental medicines not yet approved by the Food and Drug Administration. This has been a medical minute and you will find more information at yalecancercenter.org. You are listening to the WNPR Health Forum on the Connecticut Public Broadcasting Network.

Foss: Welcome back to Yale Cancer Center Answers. This is Dr. Francine Foss and I am joined by my co-host Dr. Ed Chu who is here today discussing colorectal cancer with us in recognition of Colorectal Cancer Awareness Month. We touched on the subject of virtual colonoscopy before the break Ed, and you said that this process is obviously much less painful and invasive than a regular colonoscopy, can you tell us when that would be appropriate and should all patients be getting a virtual colonoscopy?
Other potential advantages of virtual colonoscopy are that it’s very quick, it probably takes at most 15 to 20 minutes, it doesn’t require sedation, and it’s noninvasive so individuals once they have undergone the procedure can actually go back to work. Despite all of the advantages for virtual colonoscopies, if you look at all of the current screening guidelines for colon cancer, virtual colonoscopy is still not one of the approved guidelines. The reasons for that are because at the end of the day, even if virtual colonoscopy identifies a lesion, a patient still has to undergo the more invasive colonoscopy for biopsy and removal of the polyp and/or biopsy of true cancer. The other potential disadvantage for virtual colonoscopy is that it can miss small lesions, say less than one centimeter, and so that's why I think most people, including myself, would argue that the more invasive colonoscopy still is probably the gold screening method that one should undergo.

Ed, can you clarify for our listeners how often a patient needs to undergo a colonoscopy?

Again, the general recommendation is for average risk individuals, if one gets a colonoscopy the moment they hit the age of 50 and if it’s completely negative, then they probably don’t need to have a repeat colonoscopy for another ten years. Now all bets are off if in fact polyps are identified and then that's something that should to be discussed between the individual and the gastroenterologist who is performing the colonoscopy, but in that setting the colonoscopy probably needs to be repeated at a bit more frequent intervals.

How often are those polyps benign and how often are they malignant?

When one hits the age of 50, there is about a 25% chance of an individual to have a polyp, and then when one hits the age of 70, that risk goes up to about 50%. By and large, the vast majority of polyps are completely benign, but again that's actually why colonscopy is so important because if a polyp is identified at the time of colonoscopy, it can be completely removed and then you basically almost completely reduce the risk of that polyp developing into a true cancer because again we know that colon cancer, in about 90% to 95% of cases, arises from what are called adenomatous polyps.

Based on the use of colonoscopy and screening, do you think that most cases of colon cancer in the United States can be prevented?

It's estimated that perhaps we can cure up to 90% to 95% of patients if in fact colonoscopy is initiated at the age of 50.

Ed, looking back now over the last 30 or 40 years, we have started doing colonoscopy more frequently, are we picking up earlier stage colon cancers and are we altering the mortality for this disease?

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Chu: Yeah, if you look at the latest statistics that have been put up by the American Cancer Society, there has been a pretty significant reduction in the mortality rates associated with colon cancer. Even though we think of colon cancer still as a major public health problem, I think there is no question that with colonoscopy and with other screening methods, we have now been able to pick up polyps where we would not have otherwise and we are now able to detect colon cancer at a much earlier stage. What's interesting is, and this came out last week from the NIH, the use of colonoscopy has more than doubled just within the last eight to ten years, which really is pretty dramatic.

Foss: And primarily it’s essentially the internal medicine doctors and the primary care doctors that are driving that because they are getting patients in for the colonoscopies.

Chu: That's right, but as you can imagine obviously the concern for embracing widespread use of colonoscopies is the potential cost, but it’s interesting if you look at say for instance the VA System and the Kaiser Permanente System, the systems that practice socialized medicine if you will, they do remarkably well. That’s what I heard is that at the VA System, upwards of 85% to 90% of all patients who go through the VA System undergoes screening colonoscopy.

Foss: Let’s hope as our new health care legislation is being negotiated in Congress that screening colonoscopy for everybody becomes a reality in the United States.

Chu: Absolutely, because there has been some economic analysis being done and while the people who focus on the immediate cost will say colonoscopy and screening is too expensive, if you look at the dramatic increase in cost of taking care of patients once they are diagnosed with colon cancer, it's just unbelievable what the cost savings are if you do screening at an earlier stage.

Foss: Can we talk about blood tests? I know that CEA is a tumor marker for colon cancer and I am wondering, like how we use PSA to screen for prostate cancer, do we ever use CEA as a screening tool or do we only use it after the diagnosis?

Chu: Unfortunately right now there is no recommended blood test that can help to detect colon cancer. You are right that we have this blood test called CEA, carcinoembryonic antigen, and we typically use that more in following patients once they have been diagnosed with colon cancer. If their CEA levels are elevated at the time they present then we will follow them to see how they are responding to the respective treatments. One of the things that listeners might be interested in is there is a lot of interest and a lot of research being focused on trying to develop genetic blood tests that hopefully can identify colon cancer in its early stages. Interestingly enough, Bert Vogelstein and Kenneth Kinzler, two very renowned scientists at Johns Hopkins, developed a genetic based

testing system a number of years ago. What they would do is actually measure alterations in various genes in the stool of patients who were thought to be at increased risk for developing colon cancer. So this is called a stool DNA test and that actually has been able to pick up individuals who in fact have polyps and/or real colon cancer.

Foss Are there any chemoprevention studies in those patients to look at agents that might prevent those patients from developing colon cancer?

Chu It’s a great question and there are a number of studies that are being developed and are currently ongoing, but again it’s still too early to say whether or not there is a particular agent that can really help to prevent the development of colon cancer.

Foss Ed, can you talk a little bit about what happens for a patient who has colon cancer, what are the treatment options?

Chu The first thing once the diagnosis of colon cancer has been made is to determine the staging of that individual and obviously the earlier the stage of the disease the better the prognosis. Typically we would have a diagnosis made by our pathology colleagues, we would then have that individual undergo CT scans of the chest, abdomen, and pelvis as well as a complete battery of blood tests and this will actually help us to determine whether or not the colon cancer is localized to the colon or has it spread to the regional lymph nodes, the liver, and/or the lungs. Then depending upon the stage that will help determine what treatments we will recommend to that patient.

Foss Do most patients get chemotherapy?

Chu Certainly for all patients who present with what's called stage IV metastatic disease, so this is cancer that spread beyond the local confines of the colon and regional lymph nodes, primarily we use chemotherapy and/or add-on biologic targeted agents to the treatment. In patients who have what we call early-stage colon cancer, so that’s stage II and stage III disease which makes up about 50% to 60% of all the colon cancer that we currently see today, typically the treatment of choice initially is surgical removal of the colon tumor followed then by what's called adjuvant chemotherapy. The idea of giving chemotherapy after surgery is to try to prevent the colon cancer from coming back either locally, or these cancer cells are pretty nifty and they have a way of seeping out into the blood stream and then circulating out to other parts of the body, so giving this so-called adjuvant chemotherapy is really an attempt on our part to try to knock off any tumor cells that we may not be able to visualize on CAT scans but may be present throughout the body.

Foss Ed, there have been a lot of new drugs approved in cancer and particularly some new approaches

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for colon cancer involving, as you mentioned, targeted therapies, could you tell our listeners a little about that?

Chu That’s really one of the significant advances that has been made in the treatment of colon cancer over the last eight to ten years. Over the last 20 or 30 years we have had all these tremendous breakthroughs in our understanding of what makes colon cancers grow and proliferate so coming out of that understanding, we now understand what pathways seem to be most important. Coming out of that work three new biologic targeted agents have been developed. One actually is a drug called Avastin that targets the so called vascular endothelial growth factor pathway and so this vascular endothelial growth factor pathway is critical for turning on the growth and proliferation of new blood vessels either in the tumor itself or in the metastatic tumor. Then there are two other drugs that target the epidermal growth factors receptor pathway and we know that this epidermal growth factor receptor pathway is really important for allowing tumors to grow, to proliferate, to invade, and it also may be involved in this process of angiogenesis.

Foss Ed, you are doing some interesting research in your lab and in the clinic looking at novel approaches to colon cancer, can you talk a little bit about some of these clinical trials.

Chu The one that we have been most interested in is actually trying to develop a chinese herbal medicine to be used in combination with chemotherapy, and when we originally started these studies looking at this chinese herbal medicine, it was to reduce the nausea, vomiting, and diarrhea associated with chemotherapy, but we are now finding, and this is in large part due to the great laboratory research that our good friend and colleague professor Tommy Cheng is doing, that this herb may also be functioning like some of these new biologic targeted agents that I just mentioned. It has the affect of making the cancer drug work more effectively by turning off some of these growth pathways but also seems to reduce the GI side effects associated with chemotherapy.

Foss And certainly supportive care and addressing side effects is a big area in cancer therapy now.

Chu Absolutely, as patients are now living longer with disease we want to make sure that we can maintain and improve quality of life.

Foss Ed, I would like to thank you for being my guest today on Yale Cancer Center Answers. This has been a terrific show in recognition of Colorectal Cancer Awareness Month. Until next week, this is Dr. Francine Foss from Yale Cancer Center wishing you a safe and healthy week.

If you have questions or would like to share your comments, visit yalecancercenter.org, where you can also subscribe to our podcast and find written transcripts of past programs. I am Bruce Barber and you are listening to the WNPR Health Forum on the Connecticut Public Broadcasting Network.