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Gastric Cancer Prevention: A Risk-Based Approach

Dr. Buch:

This is *GI Insights* on ReachMD. I'm Dr. Peter Buch, and joining me today to discuss an algorithm for secondary prevention of gastric cancer is Dr. Chul Hyun. He's the Director of the Gastric Cancer Prevention and Screening Program at the Yale School of Medicine.

Welcome to the program, Dr. Hyun.

Dr. Hyun:

Thank you very much for having me here.

Dr. Buch:

It's a pleasure to be able to be with you. So getting started, Dr. Hyun, could you provide us with some background about current rates of gastric cancer in the United States and around the world?

Dr. Hyun:

Well, first of all, gastric cancer, globally speaking, is the fifth most common cancer, and probably fourth as far as the mortality goes. I think in the US it's considered a relatively rare cancer, but I think that perception is misleading. If we look at the most common cancers in the US, gastric cancer probably falls anywhere between 13th to 15th, maybe, in the ranking. So it is not as common as, for example, the typical other common cancers that we see. That's kind of misleading because although the overall US instance is low, the risk is not evenly distributed across population. I think we have become very good at practicing risk-based prevention for many diseases, but gastric cancer has not yet caught up with this.

Where a person was born and where they spent their early life really matters as far as gastric cancer incidence is concerned. And so the country of birth or nativity is not just a demographic variable, but it's a really meaningful risk factor. So if you look at the instance of gastric cancer in the US, it varies among the different racial ethnic groups. If you see, for example, non-Hispanic White populations, age-adjusted incidence of gastric cancer probably is around four to five per hundred thousand. But if you look at the other ethnic populations, such as Asians who have emigrated from the East Asia, for example, their rates go up to anywhere between 10 to 25 per hundred thousand. There was an interesting study published several years ago looking at people age 50 and above. We were able to see that the instance of gastric cancer can be as high as, for example, 70 to 75 in certain Asian American groups. We're talking per hundred thousand, as compared to 6 or 7 per hundred thousand in non-Hispanic White populations. So there's a significant disparity.

Dr. Buch:

So you were talking about immigration from Asia. How about Asian background but in the United States for several generations? Does that change?

Dr. Hyun:

Yes, it really changes. There is a really excellent classical study that was published back in the '60s on the Japanese Americans in Hawaii, actually. So they were comparing the Japanese in Japan as compared to first-generation Japanese Americans living in Hawaii, and they were able to show that the incidence of gastric cancer has significantly decreased already.

We've done an interesting study that was just published a few months ago in *International Journal of Cancer*, which showed that if you look at the age-adjusted incidence of gastric cancer in Japan, it's maybe around 27 to 28 per 100,000, whereas right now, that has substantially decreased for Japanese Americans who are living in the United States to anywhere probably around 10 or even less than 10 per 100,000. But if you look at the Korean Americans, whose immigration history is much shorter, their gastric cancer incidence in

Korea is about same as what we see in Japan—about 27 or 28 per 100,000. But if you look at the Korean American gastric cancer incidence, it's still about 20 or close to 20 per 100,000. So why such a variation? I think it all depends on the immigration factors and how long they have lived, because if you look at, for example, Japanese Americans, they have a much longer immigration history. So we are dealing with second, third, and fourth generation Japanese Americans, whereas if you look at the Korean Americans, we're looking at mostly the first generation Korean Americans.

So I think this is why the incidence has not fallen in Korean Americans, and not as much as, for example, what we see in Japanese Americans. The risk in terms of the incidence of gastric cancer does fall as we settle in the US and the country of the low incidence, but it really never converges to the rate that we see in average population or, for example, the non-Hispanic white population.

Dr. Buch:

So moving along, what's wrong with our current approach to prevention, and what needs to change both in our own clinical approaches and structurally?

Dr. Hyun:

I think the one important factor that we have to look into when we evaluate gastric cancer is really where the patients come from and where they were born. So I think the nativity really is a very important factor because if you look at the racial and ethnic populations with a high instance of gastric cancer, you find them in Asian, Hispanic, and Latino populations, and also from the countries of Eastern Europe and certain areas in the Middle East as well. So we have to really see where they come from. So I think the country of birth nativity really is a very important surrogate marker, but we are not really integrating that in our clinical practice.

And let me give you some example. We're looking into studies that have been done with chronic hepatitis B and hepatocellular carcinoma from it, and also latent tuberculosis. These are diseases where we actually consider where the patients come from. So if they come from countries with a high instance of those infections, hepatitis B and tuberculosis, we actually have a strategy here in the US to screen them. But we don't have such a system in gastric cancer.

So I think the science is there. We know what the risk factors are. I mean, this is a disease that's really, preventable and fairly easily treatable if they are diagnosed early enough. But if we don't do that, it can result in dismal statistics, which is what we see in the United States. And so I think integrating the nativity factor and recognizing where these people come from is a first step that we have to take into. So really the implementation is really the key.

Dr. Buch:

For those just joining us, you're listening to *GI Insights* on ReachMD. I'm Dr. Peter Buch, and I'm exploring strategies for secondary prevention of gastric cancer with Dr. Chul Hyun.

So if we turn to real-world practice, Dr. Hyun, which patients should undergo endoscopy for gastric carcinoma prevention?

Dr. Hyun:

If we look at the dyspepsia guideline, which actually was developed by ACG and the Canadian Association of Gastroenterology—it was published, I believe, about 10 years ago, and I haven't seen an update on that yet—if you look at the dyspepsia guideline, when people present with dyspepsia, we clearly recommend these days *H. pylori* screening on those people. And if they have *H. pylori*, we'll eradicate it. And if they don't have *H. pylori*, we try to give it a PPI trial. And then if the patients do not have really significant alarming symptoms, we generally do not proceed to endoscopy until, for example, they are about 60 years old.

So the reason I'm telling you this is that practice in the US is largely symptom-based as far as the secondary prevention for a gastric cancer is concerned. So I think that it may be a reasonable approach for the population with a relatively lower instance of gastric cancer. But we should be aware of the fact that there are many other populations that have a very high risk of gastric cancer, where, for example, the risk of gastric cancer at age 40 in that population would be equal to, for example, the gastric cancer risk in age 60s in non-Hispanic or average American population. So really, we have to really differentiate who the patients are. And I think the one important guideline in that regard would be looking into where they come from, looking into nativity, and also looking into the *H. pylori* infection.

We don't really have the guideline to recommend endoscopy in certain age groups yet. For example, if the patients were found to have a premalignant condition such as significant atrophic gastritis or gastric intestinal metaplasia—for example, extensive intestinal metaplasia—they are recommended. We have recommendation to surveil them, for example, every three years, especially if they happen to be from foreign countries with a high instance of gastric cancer.

But what about the average people who come from the countries of the high instance of gastric cancer and who are in their 40s and 50s? We have no such guideline. So I think in clinical practice, what I tell my colleagues is that we really have to have an informed discussion with the patients and delve into a little bit more into their symptoms and their histories seriously, but more seriously than

average population, especially with those populations with a high risk of gastric cancer, because they belong to high-risk groups.

You know what has been going on in Japan and Korea. Of course, again, these are countries with a high instance of gastric cancer. They do actually screen every two years starting age 40 with endoscopy. And as a result of that practice in the past 20 years, they were able to actually decrease the mortality by more than 50 percent. The five-year survival in gastric cancer in Korea and Japan is approaching about 70 percent. So if we talk about the five-year relative survival of gastric cancer, in the US, it's about 30-some percent. The ACG reports 39 percent. However, when we look at the gastric adenocarcinomas, only the five-year survival of gastric cancer, a non-cardiac gastric cancer, is much lower than 30 percent. And actually, we've reported that in JCO last year. And so we have such miserable, dismal statistics here on survival, and that's because gastric cancer is diagnosed late. Less than about 30 percent of gastric cancer is diagnosed at an early stage. And yes, for those patients, the survival may be as high as 70 to 75 percent, but we're talking majority of the gastric cancers are diagnosed late.

Dr. Buch:

We are in the last few moments of our conversation, Dr. Hyun. Do you have any additional thoughts you'd like to share with our audience?

Dr. Hyun:

The one thing I wanted to bring up is about the *Helicobacter pylori*. *Helicobacter pylori* used to be fairly common. I mean, studies 20 years ago have shown that, for example, the prevalence of *H. pylori* infection, even in non-Hispanic White population, was about 20 percent, and about 50 to 60 percent in the minority populations, the Hispanic Latino populations, and Asian American population, for example. But the studies that have come out recently are showing that the prevalence of the *H. pylori* infection is much lower than that. And I think that's because people have been actively treating and diagnosing *Helicobacter pylori* infection, and we have a very effective treatment for that. A lot of people have had infection in the past, but now they have been eradicated.

The point I'm trying to make is that we are living in the era of *H. pylori* eradication, so that when you evaluate the patients with *H. pylori*, for example, and then patient is *H. pylori* negative, oftentimes the clinicians tend to think, "Oh, I think he doesn't have a significant risk factor for gastric cancer, although he may be coming from the country with a high instance." But we have to think about the fact that they might have been treated. In fact, a lot of my patients have been treated for *H. pylori*, so they are *H. pylori* negative. But if you actually look at the biopsies, if we scope them and biopsy them, they do have intestinal metaplasia and/or in the gastric atrophies, which are premalignant conditions, and which are the conditions that the ACG recommend surveilling every three years. So I think we have to consider that fact that when we evaluate the patients, especially those coming from the high-risk populations.

Dr. Buch:

That's a great way to round out today's program, Dr. Hyun. Thanks for this very informative discussion.

Dr. Hyun:

Thank you very much. It's been a pleasure.

Dr. Buch:

For ReachMD, I'm Dr. Peter Buch. To access this and other episodes in this series, visit *GI Insights* on ReachMD.com, where you can Be Part of the Knowledge. Thanks for listening and looking forward to learning with you again very soon.