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Fish Consumption Fights Heart Disease

The death rate from coronary artery disease in Japan has always been curiously low. A recent study published in the journal of American College of Cardiology suggests that the low rate of coronary heart disease among Japanese men may be due to their high consumption of fish. Our guest today, Dr. Akira Sekikawa is here to discuss the findings of his study and earlier studies that showed Japanese men had significantly less plaque filled up in their arteries when compared to white men and Japanese-American men living in the United States with similar blood cholesterol levels.

DR. LARRY KASKEL:

Dr. Sekikawa, welcome to the show.

DR. AKIRA SEKIKAWA:

Thank you for having me. I am very excited.

DR. LARRY KASKEL:

Well, let's start with a little history. Lets go back about 40 years to the 7-country study which was done by Ancel Keys. What did that study show and what did you learn from that?

DR. AKIRA SEKIKAWA:

Seven-country study that it is probably the first largest international study of monitoring the cardiovascular disease and the diet across the world and we found surprisingly, surprising were Asian with regard to more healthy from heart disease, to be specifically coronary artery disease and also, now, I think we take it for granted that especially cholesterol intake or fat intake or serum level of cholesterol is a risk factor for coronary artery disease, but this study found that the very Asian across the country with regard to a coronary artery disease is corresponding the very Asian in serum level cholesterol while fat intake.

DR. LARRY KASKEL:

The critics of Ancel Keys would point out that he left out many countries that he only picked the 7 countries that supported his

hypothesis and left out the ones that did not support his hypothesis.

DR. AKIRA SEKIKAWA:

Hmm, hmm.

DR. LARRY KASKEL:

And in 1997, he actually wrote a quote, this is probably near the end of his life saying there is no connection whatsoever between cholesterol and food and cholesterol and blood and we have known that all along cholesterol in the diet does not matter at all unless you happen to be a chicken or a rabbit.

DR. AKIRA SEKIKAWA:

Well you think or I think that serum dietary intake of cholesterol is not much association with regard to that Ancel Keys says that the serum level of cholesterol is associated with mainly saturated fatty acid, positively and the main activity associated is fully unsaturated fatty acid and the part of the cholesterol intake is actually do a little part and very interestingly, researchers have long way known that the dietary intake of cholesterol is much higher in the Japanese in Japan as compared to Americans or of European countries, but level of serum cholesterol has been much, much higher in the United States or that of Western European countries, so that intake of cholesterol is a little less associated with serum level of cholesterol, that's true.

DR. LARRY KASKEL:

Let's talk about the study that you are third assist from the general of American College of Cardiology, what was the objective? What were you trying to prove?

DR. AKIRA SEKIKAWA:

One thing is that what 7 countries found is back in 1960s or 70s, Japan has somehow much, much lower mortality of coronary artery disease compared to other developed countries that research had shown this is mainly due to the very low level of total cholesterol in this population. At that time, Americans, their level of total cholesterol is about 240, where as England of 260, where as in Japan 160, so this may be the reason why Japanese have a very low level of coronary artery disease mortality, but since then, so called risk factor of coronary artery disease, blood pressure, smoking, or cholesterol, because of the westernization of the lifestyle change towards to the westernization the lifestyle in Japan, the level of total cholesterol or LDL cholesterol continuously is rising and just compare the people those born after World War II and compare the same age group in the United States, especially white man, their level of the total cholesterol and blood pressure has been very similar throughout the lifetime and in addition, if you have been to Asian countries, non smoke infamously, thus rate of smoking is much higher, so just as additional risk factor wise, there seems to be no reason. We can assume that the Japanese in Japan have much lower coronary artery disease mortality as compared to US. The other issue is some people would say Oh! That's may be just genetic. So, we also have the Japanese-American component in our study.

DR. LARRY KASKEL:

What kind of methods did you use in the study? Who did you look at, what kind of populations?

DR. AKIRA SEKIKAWA:

Among age 40 to 49 and population based sample in Japanese in Japan and Japanese-American in Honolulu and white, yes.

DR. LARRY KASKEL:

And what kind of things did you look at besides their bits?

DR. AKIRA SEKIKAWA:

Outcome, measurement because incidents of that grade of coronary artery disease is very, very low in this young people, so we use that noninvasive imaging technology to assess the level of atherosclerosis. So, we use coronary calcification evaluated by CAT scan, also the thickness of the internal carotid artery, so we called it IMK.

DR. LARRY KASKEL:

Dr. Sekikawa, what were the results of your study?

DR. AKIRA SEKIKAWA:

Result shows that the so called traditional risk factor and that cholesterol, blood pressure, smoking or other things did not explain the difference in the level of subclinical atherosclerosis between the Japanese in Japan and white, but if we put the serum levels of fish oil and free fatty acid, we would say the difference disappears. So, very high consumption of the fish among the Japanese may be the reason that they have much lower rate of coronary artery disease and much lower level of atherosclerosis.

DR. LARRY KASKEL:

When a Japanese man moves to Honolulu, what kind of changes in his lifestyle besides food. I mean does he take on the western style of living which is less contact with family, more stress, more chasing the dollar, and eating more processed foods?

DR. AKIRA SEKIKAWA:

All Japanese-American population is first purely Japanese, Japanese, no make out a mixture for 1 thing and these are the third and fourth generation Japanese-American, so we could say they are purely genetically the same with the Japanese in Japan, but in culture and lifestylewise its totally acculturated, so westernized, totally westernized.

DR. LARRY KASKEL:

And the other things that change are the air quality, the water quality. So, it seems there is more factors than just the fish intake?

DR. AKIRA SEKIKAWA:

You mean comparing the Japanese in Japan and white or the Japanese-American issue?

DR. LARRY KASKEL:

The Japanese in Japan and the Japanese in America.

DR. AKIRA SEKIKAWA:

Aha, I would say that.

DR. LARRY KASKEL:

Hawaiian air is pretty good.

DR. AKIRA SEKIKAWA:

Yeah, yeah and with regard to that, yes they prove to be much better, yes.

DR. LARRY KASKEL:

Perhaps, it's just speaking English and living in America which is what is dangerous for your health.

DR. AKIRA SEKIKAWA:

Yeah, another hypothesis is that they do not use chopsticks.

DR. LARRY KASKEL:

I like that, I like that, we should get rid of our forks. Well, let's talk about how much fish intake is the appropriate amount of fish intake. What is normal fish intake in Japan?

DR. AKIRA SEKIKAWA:

In Japan, surprisingly, they eat fish every day and the National Nutrition Survey says that among age 40 or 50, they eat about 100 g that is about how much ounce, 100 g of fish every day they eat. This is very striking with the data from the United States or other countries, in the United State medium value of fish intake is probably less than 2 times a week versus every day 100 g.

DR. LARRY KASKEL:

I remember reading a study where they actually supplemented Japanese people in Japan and gave them even more fish oil. That is the study called .

DR. AKIRA SEKIKAWA:

Yes.

DR. LARRY KASKEL:

So, did they get even more of a benefit?

DR. AKIRA SEKIKAWA:

We need to be very careful to interpret that study for 1 thing is that incidents of coronary artery disease or heart disease actually, yes they have beneficial effect, but mortality wise no different.

DR. LARRY KASKEL:

Let's talk about mortality. So, the Japanese men are not dying of coronary artery disease. What are the major causes of death in Japan?

DR. AKIRA SEKIKAWA:

Real cardiovascular disease, but the stroke rate is far, far higher than that in the United States and the cancer about the same.

DR. LARRY KASKEL:

So, any theories why more strokes?

DR. AKIRA SEKIKAWA:

I think mainly the control of blood pressure.

DR. LARRY KASKEL:

So, when we look at fish oil, there is a lot of proposed mechanisms that say why the fish oil is working. Some say it's antithrombotic, some say it is stabilizing membranes, some say you know lowering triglycerides. What do you think is the ultimate mechanism responsible for all the benefits?

DR. AKIRA SEKIKAWA:

I think that the current rate of American Heart Association recommend the healthy people increase the fish intake 2 times a week is current recommendation and this is I think based on the fish effect on antiarrhythmic effect. They have lots of study to support this hypothesis. And increasing the fish intake 2 times per week and more did not have much effect with regard to arrhythmia and I agree with that, but our study, Japanese in Japan we found that significant negative association with serum level of fish oil with measurement of atherosclerosis. So, which means lifelong intake of fish may be associated with antiatherogenic effect.

DR. LARRY KASKEL:

What do you think is a good recommendation for all Americans in terms of the amount of fish they should eat per week and if they do not like fish, how much fish oil should they take a day?

DR. AKIRA SEKIKAWA:

I think that current rate America Health Association recommended 2 times per week of fish intake is very reasonable and I do not suggest to increase the intake of fish based on our study result because we don't have any clinical trial evidence with regard to increased fish intake substantially that can prevent the coronary artery disease. So, the current recommendation is great and I am not sure the point that omega-3 supplement is good or not. I don't think any good research as to the healthy population.

DR. LARRY KASKEL:

And I am wondering if you think there is an opinion between over-the-counter fish oil and prescription fish oil?

DR. AKIRA SEKIKAWA:

Prescription fish oil is basically for those who have heart disease, right?

DR. LARRY KASKEL:

Right, and it is also indicated for the lowering of triglycerides currently in the US.

DR. AKIRA SEKIKAWA:

Yeah, lowering triglycerides but medication for the lowering of triglyceride is temporary or other medication and if that does not work, omega-3 may be good choice.

DR. LARRY KASKEL:

Dr. Sekikawa, is there is anything else you would like to add before we go?

DR. AKIRA SEKIKAWA:

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DR. LARRY KASKEL:

Dr. Akira Sekikawa, thank you very much for talking with me today.

DR. AKIRA SEKIKAWA:

Thank you very much having me.

DR. LARRY KASKEL:

I am Dr. Larry Kaskel. You have been listening to the Clinician's Roundtable on ReachMD, the Channel for Medical Professionals. If you would like to contact us with any suggestions, please reach us at reachmd.com and you can also find our entire library of on-demand podcasts there and thanks for listening.

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