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Connections Between Depression and Heart Disease

It is known that depression and heart disease can be associated, but what is the nature of that association and can therapy of depression improve cardiac outcomes and a patient's quality of life? You are listening to ReachMD, the Channel For Medical Professionals. Welcome to the Clinician's Round Table. I am your host Dr. Lee Freedman and joining us to discuss depression and heart disease is Dr. Leo Pozuelo, section head of consultation, liaison psychiatry and associate director of the Bakken Heart-Brain Institute at the Cleveland Clinic in Cleveland, Ohio. Thank you so much for being with us Dr. Leo Pozuelo

DR. LEO POZUELO:

Many thanks to invite Dr. Freedman.

DR. LEE FREEDMAN:

It is our pleasure. So depression and heart disease definitely are related, what is the nature of this association?

DR. LEO POZUELO:

Well, we are starting to get a better handle of it. We know a couple of things. One that people who have never had a heart disease and if they get clinically depressed, they have a higher incidence of developing heart disease and then we also know that patients that have preexisting heart disease, who get clinically depressed, they do worse than their counterparts. So, there are certainly some underpinnings and I think in the last 5 to 10 years, we've had some really good cracks at it from studies looking at this intricate relationship.

DR. LEE FREEDMAN:

So, both in terms of a primary prevention type of perspective, people without heart disease, depression does pose a risk factor and those with coronary artery disease and heart disease do worse if they have depression.

DR. LEO POZUELO:

That's correct.

DR. LEE FREEDMAN:

And do we have any feeling for the magnitude of that risk, say for developing heart disease?

DR. LEO POZUELO:

As far as depression causing heart disease, that is a little bit not as well studied. What we do know is the prevalence of depression in heart disease; it is certainly higher than the general population; it is about 20 to 30 percent.

DR. LEE FREEDMAN:

I would imagine treating the number of depressed patients that there could be some fall out from the depression that affects other more traditional risk factors.

DR. LEO POZUELO:

Exactly, and lot of those things are looked as far as why these people do worse such as lack of exercise, such as medication adherence, etc.

DR. LEE FREEDMAN:

Interesting and so again for development of heart disease, people with heart disease do worse. Do we see more depression in people who have established heart disease compared to the general population?

DR. LEO POZUELO:

It does seem that way and it causes the spectrum of folks, for example, that have congestive heart failure that go for a CABG, that have acute coronary syndromes, and it appears to be higher than the general non-cardiac population.

DR. LEE FREEDMAN:

Do we understand some of the mechanisms behind these associations?

DR. LEO POZUELO:

Well, I think that's where the exciting research from a lot of colleagues has been going on trying to crack that and there have been a couple of reported mechanisms. One of them may have to do with autonomic tone; people with depressed heart disease have differences in their vagal tone and that lead to complications. Other mechanistic pathways look at inflammatory markers. We know that people who are clinically depressed have higher CRP levels.

DR. LEE FREEDMAN:

Hmm.

DR. LEO POZUELO:

They may have increased interleukins, colleagues as well looking at the HPA axis as a distress response and those have been circulating as possible mechanism for some time. There appears to be some exciting research going as well as genetics, are there predisposition in folks as far as promoter genes; for example, serotonin transport gene are those folks more at risk if they have that type of marker compared to those that don't? So the research is certainly ongoing.

DR. LEE FREEDMAN:

That is interesting. So a number of different fronts, different mechanisms, the autonomic, the inflammatory markers, platelet activation, the hypothalamic pituitary axis and maybe some genetics as well.

DR. LEO POZUELO:

Correct and you are correct in mentioning as well as platelet activation. We know that people that are clinically depressed, you know, have increased aggregation of their platelets and platelet reactivity.

DR. LEE FREEDMAN:

All things that we are looking at very closely in heart disease, very interesting. So we have these associations and some possible mechanisms, do we know if addressing and trying to treat the depression helps with outcomes?

DR. LEO POZUELO:

Well, here is where it becomes interesting. There have been at least over the last 15 years some really significant trials done by great people across the country internationally and to this date, there is no conclusive evidence that by treating depression, do you make a dent in morbidity and mortality of these patients, so the hard outcome data such as mortality and for the cardiologist in the audience the body count. They are going to be looking at do we make a dent; the answer is as of yet we can't prove that.

DR. LEE FREEDMAN:

Ahh, disappointing.

DR. LEO POZUELO:

It can be, it can be, but the way to look at that when you start teasing out the intervention studies is that the context of the depression, what qualities of the depression are really cardiotoxic, because we lump depression into one lump category.

DR. LEE FREEDMAN:

Hmm.

DR. LEO POZUELO:

We diagnose it in a broad stroke and so really the challenge for the behavioral medicine scientists and researchers is to look at what are the aspects of that clinical depression that really pose the highest cardiac risk?

DR. LEE FREEDMAN:

Interesting and have there been some indications of what aspects of depression are most cardiotoxic?

DR. LEO POZUELO:

Right and when they look at the common links and what it may be the connections, there has been some elegant studies done by Mary Wooly and colleagues in the Heart and Soul study looking at lack of activity, physical activity, having the highest predictive value between depression and cardiovascular disease. So is it the lack of energy, is the lack of motivation, there are concrete symptoms of depression that really make the biggest impact in morbidity and mortality and that is probably going to be coming up nicely in some upcoming studies looking at the role of exercise in patients with heart disease and depression.

DR. LEE FREEDMAN:

Hmm and I wonder if this anxiety play a role there, we often use the term or we used to the cardiac cripple who is too afraid and so they don't get up and exercise.

DR. LEO POZUELO:

Absolutely. I think anxiety poses some other challenge to further clinicians. Typically we look at patients that come in through the emergency room, they have a chest pain, you do the enzymes, everything is negative, it looks fine, you reassure them that it is just a panic attack and it is not going to kill you; even though, it hasn't been as well study of this depression and heart disease, there is some data that folks with persistent anxiety and anxiety disorders can be at higher cardiac risk, even though that it's not as well elucidated as it is in depression and heart disease as of yet.

DR. LEE FREEDMAN:

If you are just tuning in, you are listening to the Clinician's Round Table on ReachMD, the channel for medical professionals. I am your host Dr. Lee Freedman and we are discussing depression and heart disease with Dr. Leo Pozuelo, section head of consultation liaison psychiatry, and associate director of the Bakken Heart-Brain Institute at the Cleveland Clinic. So Dr. Pozuelo, we know that depression is there with heart disease. Is this something that clinicians pick up well or do we have to take special steps to be on the look out for this?

DR. LEO POZUELO:

Well, this is why I think the recent guidelines put forward; it was actually a science advisory by the American Heart Association just at the end of September, which called upon all clinicians that work with cardiac patients to be taken active screening for depression that is in any patient with coronary artery disease. The nice thing about the science advisory and the folks that put it together is that they really provided some simple tools, screening tools that any clinician as busy they can be can use screening for depression in patients with heart disease.

Dr. LEE FREEDMAN:

You want to outline those things that we should be asking?

DR. LEO POZUELO:

To get back to your point, we have clinicians even in the cardiologist and folks working in the cardiac field. We tend to really under-diagnose and certainly under-treat the incidence of depression and heart disease. For that matter, a screening tool that is practical, easy to use is pivotal and the consensus from the science advisory and we have been using this tool in our institution as many others is really using the patient health questionnaire, abbreviated the PHQ9. It is not a psychiatric screening tool per se, it is well validated in internal medicine, been used in diabetic populations, medically ill populations, very easy to administer. It is not copyrighted. It is 5 minutes maximum and it really just outlines 9 questions self report that you can give to your patient while they are waiting for you in the waiting room. There is a subset of that, which is called the PHQ2, which literally just takes the first two questions, and if you want, I can just read those because these have been well validated as even just a simple screening conversation question that you can use. It entails asking the patient point blank in the last 2 weeks:

1. Have you had a little interest or pleasure in doing things.
2. In the last 2 weeks, have you been feeling down, depressed, or hopeless?

What is impressive is that if a patient really answers yes or no, even to one of those two questions, he has about a 90% sensitivity and a 75% specificity of detecting a clinical depression followed by the PHQ9. So that may be a very easy tool to use in your cardiac patients and your internal medicine patients when you are able to do screening for have an index of suspicion, there may be some depression going on.

DR. LEE FREEDMAN:

That is fascinating, I think, I am an internist and I think I will incorporate that after looking at your beautiful article in the Cleveland Clinic Journal of Medicine this January that kind of reviews this topic, I was just founded to see how poorly season clinicians apparently do it, picking up depression in this group of patients and so that seems like a very simple screen that I should incorporate.

DR. LEO POZUELO:

It is well validated and again it is not a psychiatric measurement per se, it is a very easy scale to use.

DR. LEE FREEDMAN:

And then in terms of treating patients, I would think we have some concerns about tricyclics in this group of patients, do we go with the SSRIs?

DR. LEO POZUELO:

Yeah correct, your points are well pointed out that TCAs are sufficient evidence that show that anybody with a previous or existing history of coronary artery disease should not be prescribed these medications. Even for things such as diabetic neuropathy, there is better alternative. Clearly for antidepressant, the most validated and well studied medications and treatment of depression and heart disease are the SSRIs and among those too again born out by the intervention studies that have been done default to 2 SSRIs, one being Zoloft, sertraline, and the other one being Celexa and citalopram.

DR. LEE FREEDMAN:

So those are the ones that have the best data behind them?

DR. LEO POZUELO:

Correct.

DR. LEE FREEDMAN:

And I imagine these although you mentioned they don't seem yet to be proven to improve cardiac outcomes, probably help with quality of life, do they not?

DR. LEO POZUELO:

Correct and that is probably the most meaningful discussion you should have with your patient. It is really looking at how is this depression affect, is it really making an impact in your quality of life, how you perceive things, how your enthusiasm to follow through with your daily routines as well as your recommendations from your docs as part of your rehab or conditioning back into health and those medications certainly have been proven to be safe in the cardiac patients, so that notion that antidepressants again born from the TCAs long time ago that they could be cardiotoxic, certainly does not apply to the safer SSRIs.

DR. LEE FREEDMAN:

Would you suggest trying to incorporate other treatment strategies such as psychotherapy?

DR. LEO POZUELO:

Well, that is what the interesting results of some of these studies have shown us that long term or very deep interpersonal type of therapies where you really start to cover a lot of stressors, does not seem to be very beneficial in treating depression with heart disease. It is more of a supportive, cognitive behavioral therapy that is born out to be most effective in treating patients that have these 2 illnesses, depression, and heart disease. So CBT, which is a commonly mainstream, short-term type of therapy given by good psychologist, social workers, masters level therapists seems to be the way to go.

DR. LEE FREEDMAN:

So right after your heart attack and angioplasty, you don't want to delve into the complex you had as a child with your parents?

DR. LEO POZUELO:

You got it.

DR. LEE FREEDMAN:

Ok, but more to the cognitive behavioral therapy and that seems to be helpful.

DR. LEO POZUELO:

Correct, as far as I herein now type of therapy.

DR. LEE FREEDMAN:

In cardiac rehab, is there a role for that in terms of anxiety and depression and getting back on a person's feet?

DR. LEO POZUELO:

Absolutely, and I think that is one of the things that you know with our colleagues that we reviewed in the article and in many front leading researchers such as Jim Blumenthal down at Duke would recommend because the cardiac rehab envelops a lot of the wellness initiatives that we would like for our patients, stress management, certainly a high importance for exercise, certainly dietary adherence and a few can enroll these patients and again that is another area of referral that were grossly under-referring and we are really not doing a good advocacy for our patients because many of them qualify and don't go to the cardiac rehab. This program as you well know typically involves 12 weeks, especially the phase 2 and it gives a wonderful opportunity for the clinicians there to A. assess and screen for the depression and also to put mechanisms in place to treat it.

DR. LEE FREEDMAN:

So that really seems very enthusiastic about us doing a better job, getting our patients into cardiac rehab programs?

DR. LEO POZUELO:

We have to, absolutely, and I think one of the benefits of the science advisory that came out for our clinicians is that I think it is going to open the doors to have better access to mental health professionals in the cardiac rehab setting, in the cardiologist office, so that we can hopefully start to de-stigmatize going to see the psychiatry or to get mental health help.

DR. LEE FREEDMAN:

Are there some institutions now that are kind of embedding psychiatric services in with their cardiology services?

DR. LEO POZUELO:

I think yes, it is becoming more of a trend nationwide, you know certainly big centers and other ones like ourselves have had a tradition now for 3 to 4 years of having a patient go see the psychiatrist right there in the preventive cardiology office, as in the cardiac rehab Arena, the physical proximity, the intercollegial consultations, and the de-stigmatizing that goes on that setting really, really helps the access, really, really helps the acceptance, and I think it really does lead to better results of the patients and the clinicians.

DR. LEE FREEDMAN:

Do you think that we will see some data on the body count eventually with programs that involve cardiac rehab, cognitive behavioral therapy medications?

DR. LEO POZUELO:

We hope so. The lot of the limitations and some of these studies have been just assured number of patients for achieving the sufficient physical power and also the complexity and the mechanisms that we outline in our chat today. If we look at the end point of quality of life and maybe exercise and medication adherence, I think will be seeing some good data down the road that treating depression certainly can impact those variables. It still needs to be seen as to whether we make a significant impact in the hardcore outcome such as mortality.

DR. LEE FREEDMAN:

I very much like to thank my guest Dr. Leo Pozuelo from Cleveland Clinic in Ohio. I am Dr. Lee Freedman and you have been listening to the clinicians round table from ReachMD, the channel for medical professionals, ReachMD on line, on demand, and on-air, please visit us at Reachmd.com. Thank you for listening.