The Power of Nanotechnology in Lyme Disease Recovery Transcript

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Introduction to PD Labs and Novel Drug Delivery

This is doctor talks. Real talk from real doctors. Only issues that matter to you most. Doctor Richard Horowitz and I'm the co-host of the Doctor Talk Healing Lyme Summit 2.0.

It is my great pleasure today to introduce you to Ray Solano. He is the head of pdlabs. This is a compounding lab that has a novel delivery system for prescription drugs.

With some of my favorites that you're going to hear about, which is methylene blue and low dose naltrexone. So Ray, thank you for joining us today. Tell us about this novel delivery system and kind of how you got into this in the Lyme world.

Well, you know, thanks for having us today. You know, we want to really get the word out that there's there's different ways to get these unique molecules that are so powerful into the body.

And so the what we did, what we had started is, you know, we're always a sterile, compounding pharmacy. But, you know, unfortunately, the regulatory nightmare and and being able for stability of these drugs is difficult.

So we look for different ways for you get these unique, small molecules into the cells. So we partnered with a pharmaceutical company that had a unique, patented, method of taking a nano sphere for super low, levels of a, of a of a pharmaceutical or a, nutraceutical it down to 50 nanometers, and then envelope it in a phospholipid layer.

So, you know, more than that is, is all the patent will allow me to talk about. But it is makes a small molecule that attaches to the outside layer of the of the cells and gets absorbed very quickly.

So you get something that again, easily absorbable, it has less side effects because you don't need that much drug. And it is something that's stable.

There's so many times does it require refrigeration. So you know, one of the things that, you know, was is one of your favorites. We we've worked on a number of, you know, our call to fame is the synapse.

And nasal spray, which we developed about ten years ago. And and again, these insoluble compounds are the difficult ones.

How the NanoSphere Phospholipid System Works

And then we we tried it out on your favorite, which is, is methylene blue, you know, and you may, you may want to say, well, the methylene blue is easy to absorb.

You can take it the liquid in many different ways. However, you've done a lot of work and a lot of your papers on high dose methylene blue. Yes. And methylene blue.

And high dose sometimes give side effects. And so the, you know, the magic is how do you get, you know, the benefits of the high dose, but without the side effects.

And we feel very strongly that that's the mantra of this new delivery method, getting the drug into the cells with a lower amount to do its work without, causing all the other timer reactions.

So that would be, by the way, this is almost too good to be true, right? I mean, for me, because you're right. I mean, the thing is, is with some combination therapy, which, And I was just a little while ago, I was speaking to Dennis, you know, and I was telling him, like, we're applying for grants, right?

We're going for an R 34 grant from multicenter, placebo controlled, randomized trial. And of course, I have to use methylene blue because it reverses one of the major side effects of DAP zone, which is meth.

Hemoglobin Amia, where you don't carry oxygen well in the blood. Now I've been using methylene blue now and you know, different doses for years. I find generally the low doses are never a problem.

In fact, you know, I can use low doses. Really? People don't notice anything. But you're right. As you get up to the higher doses, you have to be careful.

They can't be on site drugs because you have to worry about serotonin syndrome, right? In these type of people and agitation, they have to be on low histamine diets because if they're not, methylene blue can raise blood pressure with an add mayo type effect.

You'll get a little bit of urinary burning, right? Mostly in women, but in men at the higher doses. So I've been able to work around it. And fortunately it's allowed me to do high dose zap zone because for Lyman Bard, I've needed higher dose methylene blue and higher dose zap zone to knock these bugs out.

I mean, that's why we're designing a randomized trial. So I hope to work with you. And I think this is the way you and I are going to probably do this in the next year since you're just developing and people should know also this new formulation of methylene blue, I'm taking it you said apples of it, and I'm actually on it right now.

I decided to try it because, you know, that's how I am. And I'm taking your ten milligram and I feel fine and my energy happens to be good. I'm not sure if that's the reason for it, because they're using it for mitochondrial dysfunction and Alzheimer's.

We'll get to this in a second. But it's interesting because what I work, what I'm going to do with you over the next year is work with you, get labs on patients on DAP, some with your formulation, and do a control and use the regular methylene blue.

Use your formulation and find out. Like instead of maybe using 300 of methylene blue twice a day, which is what I've need to keep them off hemoglobin, by the way, at about 5%, 6% on 400 of DAP.

Methylene Blue, Side Effects, and Lyme Treatment

So maybe with your product I'll be able to use a 10th of the amount. I won't know until we actually do this. Have you been able to do any of the comparison studies so far?

On like comparison of the strength of this tablet of this novel delivery system versus, you know, the liposomal forms that are out there? Well, right now we have some mostly anecdotal information we did with team with practitioners like yourself that, be able to have case, studies on individual, individual patients.

You know, we've been doing a phospholipid liposomal capsule for, for many years. And, you know, doctor, Dennis Katz and Hopkins Drug pioneered this, this formulation.

And then we found that in the when we did liposomal capsules, that a 25 milligram, capsule would be equal to a 50 milligram, just regular powder. So there was usually always a much more efficient, usage of a light prism or capsule, for many, many patients.

However, when we use this form, it's a, it's a solid state life of sphere, which is totally different, is even more efficient that the body is able to absorb it.

And so this is the reason why the, the, the ten milligram, tablet, some of our and the dental information is almost equal to, like a 50 milligram powder form.

So you might you might be talking even a 5 to 1 about a 5 to 1, is what we're looking at. And if I could just maybe

just, give you a little bit of grounding.

We use this with, testosterone as well. And testosterone is injectable for many of these patients that we had been using. And we were able to get, free levels of testosterone equal to and injections, but using over, 7.5mg a day of testosterone.

So we were getting equal to five times absorption, with, with a chewable testosterone tablet than we would for an injection. So hold on. If for people who don't know about hormones. Right.

That is unheard of because first of all, you're not really supposed to be able to take oral testosterone in that form. I mean, if I want to raise men's testosterone, I'm using, you know, Clomid 50mg, half a tablet three times a week to go to the pituitary and say, hey, make luteinizing hormone, right, to kind of push it up, and then maybe use a remedy anastrozole to stop the romanization of testosterone, you know, to estrogen your sex need, for example, doing those type of things, especially injectables or creams, by the way, again, for people that don't know about hormones, these wear off over time, right?

So a lot of times you give a cream to someone they don't, right. If you don't have to. So you've tested the blood levels. This just has shown and you've we have.

And Doctor Andy Heyman is pioneering this study with his patients. And we're getting these clinical trials started. We got close to we got eight patients in the trials.

Now we need to add five more. But you know, we're we really validating that the, again, these molecules can be manipulated and be able to reduce to be able to get super high levels of absorption.

So and the first pass effect in the liver, it there's no you're not getting a first pass effect. When we're not getting the estrogen effects. We're not getting the liver enzymes.

And that's what's really exciting. So every time we take a molecule and one of these products and we put it into this, this form, we're getting great results.

And low dose naltrexone is the next one that we are coming out with as well. The LDN and and again, we're, we're talking anecdotal information from some of the patients and clinicians, but we're getting at least three times more effectiveness, for the drug and appetite tube than it's used for the weight loss drug.

We've done this.

Testing the New Formulation in Clinical Trials

So we, we, we feel we have a pretty good data base that we can do the trials like yourself with your, premise that we're, we're going to improve outcomes for patients.

There's no question about it. Well, now, this is exciting because, you know, we're in the R 34 planning grant for this NIH trial, right? Right now trying to get funding.

I'm working with either group or Alina's. I have a great biostatistician. Nicole close. She's run these trials. But what's great for me is it is always the side effects of that.

So that I have to worry about in these trials. Right. So the anemia I've kind of been able to work around with high dose. Luke Avorn I'm using like 100mg twice a day.

I'm using elemental folate, 60mg twice a day. So question for you, since we're on this topic of this novel delivery system, it so I will not you're saying if I'm let's say it's a five times ratio.

So you might be able to give me theoretically a methylene blue at 50 or 60mg of this tablet, this novel delivery

system, which would be the equivalent of the 300 that I need to lower meth hemoglobin on high dose zone without worrying about, like serotonin syndrome, because they're not getting the same amounts of methylene blue in the system.

That's what we're thinking, is that we get that we're getting a higher cellular absorption. And I think the side effects you're talking about is the extracellular, fluids and extracellular, methylene blue, that it's a, that it's affecting the other receptors.

That's causing all the side effects. So you know what? I'm what I'm going to suggest on this is that when you and I do this, this coming year, when, let's say you send me samples of different dosing and then we go to the labs, I'm going to we're going to have to do this well because assuming the R 34 grant gets accepted and we write the trial, which I'm hoping right now it looks like it probably won't start till 2026.

I have to provide information for the FDA, and for all of the boards, right. When we apply for this, for the IAB to show the equivalence that we have a study, in fact, we may want to publish this.

You and I may want to publish this together, because then I'll be able to use your formulation of methylene blue. And the dropouts for the trial may be less.

Now, normally I can get people through this without them dropping out, but obviously if I could provide a safer, even more effective way. Okay, repeat the question one more time.

So how did you learn about this technology? Doctor Jim Lovell, a partner with us for the Laval Performance Health Center had, met, Doctor Sean Hack and mutually in, at a conference and explained the, the, the philosophy of this, of this novel compound.

And Jim took it and he said, you know, this is exactly what we've been looking for because we have so many of these insoluble compounds curcumin, EGCg, all these items are very difficult to get absorbed into the body.

They're only half the curcumin is only absorption is only half a percent. So you have to take so much of these drugs of these, either nutraceuticals to get absorption.

So that's how we started with them. We realized this is, this is a gap of being able to, put these products in the nano sphere, 15 nanometer size. It gets the body, absorbs it so much differently.

So that's how we got it started. And we realized this kind of, adaptation. It was the there was a silver bullet that we all were. We've been looking for for quite a while.

So, so.

Origins of the Technology and Liposomal Comparison

And like we, we all know that liposomal you know, a lot of times you know this in the products. They'll use things like by operating the black pepper extract for absorption.

We sometimes will give liposomal formulations of other things with other drugs we're giving because it may be pulled in. So this is even superior saying in some ways to the liposomal.

Well, exactly. If I can make it really quick, you know, when you get them, the log, the nanometer size, they actually the particles break apart. And when you put them in as phospholipid, the ionic charges of them don't come back together.

They actually separate. So they're, they're they they don't a conglomerate. When you have regular life of spheres, liquid life or spheres, guess what.

Over time they come back together. And that's when they become a complex and they don't really work. But these actually repel. We actually have a microscope screening of showing these little particles.

They, they're, they're going through and, and then under the microscope and you can see that they don't come together. They stay separate, which is that's what we think is, is happening.

So this is why a nasal spray that we would normally do is a nasal spray. We can take a tablet and get the same results. That's amazing. Now that's really amazing. Congratulations though.

This really sounds like cutting edge, research being put into practice. I'm it's fabulous. And, you know, we think it's in it's cost effective for patients.

It's not a premium. It's not tenfold more expensive. You know, chronic diseases. We congratulate you on all the work that you've done for thousands and thousands of patients.

And you're always looking for different ways. Who would ever thought of putting DAP on, in use for, for for Lyme. I mean. Well, I mean, the truth is, is I, I don't know if you know how I came up with this, but it's when John Hopkins, I went back like 8 or 10 years ago, they said, oh, Lyme, by the way, Borrelia burgdorferi is a biofilm.

Persist your bacteria, which meant not that it persists. We knew that, but that it's a persist like Mycobacterium tuberculosis leprosy. So I looked up leprosy and I went rifampin zone cures leprosy.

One year I said, let me look at the qualities of that zone. Great central nervous system penetration lowers inflammation through my lip peroxidase. Right.

Helpful for autoimmunity as antimalarial effects hits persistence. It was like, oh, my God, it's checking all the boxes. So I said, let me put doxycycline with it with rifampin and DAP shown that they use for leprosy.

And it was a home run from day one. But now with what you're saying is we may be able to do these clinical trials and not have patients worry so much about the side effects.

So question for you. If this is such an amazing, you know, which it sounds like the technology is amazing with, you know, this unique delivery system.

What about the folic acid. Like right now I have to use massive doses of Luca Vaughan and L fortify, you know, 15mg of L methyl folate for twice a day, just three twice a day for twice a day to stop gaps on induced anemia.

And I haven't found it to affect the efficacy of dapt. So it just helps to block the anemia. Is it possible that maybe you could also make an L methyl folate formulation, or even put Luca Vaughan standard drugs like and and do that with this formulation.

So people don't need so many pills that that's what we're looking at, you know, and again looking at the chemistry, it depends if it's insoluble and it's difficult to absorb.

That's usually the checkbox forward. So you know, we're we're building out our pharmaceutical division next to us. We're going to have an expansion of a new building.

So that will be able to do more of these, of this work. Because we definitely this especially like El methyl, folate, am I it's an older medication that's been around, so nobody's we're not we're not, infringing on anybody's patents.

So it's a perfect candidate, for those type of things. No, this is great because I'll have about a year to actually play around.

Future Uses, Contact Info, and Closing Remarks

You and I going to discuss getting samples and dosing and stuff, but we have to do this. You and I have to sit down separately, and we have to design this.

So for example, it's five patients on DAP zone 200 right. With your and I compare five patients on DAP zone with this level of looking for an element for folate.

And then your formulation and look at the anemia. Compare the CBC. Right. It'd be fascinating. Fascinating. Well you know as you can see there's great things that we're going to be able to do together. And we're really excited.

That's wonderful. Well congratulations. So how do people get in touch with you right. How do people learn about, pdlabs and at this point, access some of this amazing technology?

Well, check out our website, pdlabsrx.com, pdlabsrx.com, and, we have a physician's page on the top that you can be able to access our formulas. We have many of the unique LPT that's the family.

There's LP teas and supplements that are on our our e-commerce page. But it's really easy to get Ahold of us pdlabsrx..com or phone numbers. There is (888) 909-0110 and easy to get Ahold of.

And guess what? I still work in the pharmacy. You answer the phone, you're like, you're still in the front lines. You're still doing this and and wonderful for you that you're developing.

Because for all of us who've been in the field for a long time, when you start, like pushing the boundaries to improve patient care, right? Finding things that no one's done.

I mean, it's exciting, right? Exciting times. And that's what we do so. Well, thanks for, get this on. The DrTalks and we're going to have our own we have our own podcast.

So follow us on healthy Choices podcast as well. Excellent. So again, for those of you who've been tuning in, my name is Doctor Richard Horowitz. I am co-host of the DrTalks Healing Lyme Summit 2.0.

We've been with a Ray Solano from PD labs talking about really some amazing new technologies, for delivery systems in the body. So. Ray, congratulations.

I look forward to working with you, actually. And improving patient care together. There we go. Oh, great. Thanks again. Okay. Thank you so much. Bye bye, everyone.

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