EP.140 Chris Chapman and Adam Kaplin - MyMD

Narrator: You're listening to *BioTalk* with Rich Bendis, the only podcast focused on the BioHealth Capital Region. Each episode, we'll talk to leaders in the industry to break down the biggest topics happening today in BioHealth.

Rich Bendis: Hi, this is Rich Bendis. I'm your host for *BioTalk*, and we have a treat for the listeners today. We have a two-fer. We have two rather than one, and both are MDs, and that's going to be a stimulating conversation for all of us. We have a Baltimore-based clinical-stage pharmaceutical company, and we have the Chief Medical Officer, Christopher Chapman. Christopher, how are you?

Chris Chapman: I'm fine, and you?

Rich Bendis: Great. And then we have Adam Kaplin, who is the Chief Scientific Officer. Adam, good to talk to you again.

Adam Kaplin: Nice to talk to you, Rich.

Rich Bendis: Great. Normally we do one person, but you guys have worked as a team long enough that this is going to go extremely smoothly, and we're going to have very easy transitions from one to another as we roll through this interview here.

0:01:06 I've introduced you briefly, but the best thing we do is to let each of you do a self-introduction on what you think the listeners would like to know about you. I'm going to start with Dr. Chapman. Can you talk a little bit about how you integrated your skills from medicine, the military service, and business into your current role that you have, Dr. Chapman.

Chris Chapman: Yes. Thank you, Rich. I graduated from Georgetown University School of Medicine. I did my internship at Georgetown. I did my residency at Georgetown. I did my fellowship at Georgetown in ob-gyn and pediatric anesthesiology. My fellowship was as an anesthesiologist; I decided that I was doing a lot of work with anesthesiology, and I would go in the morning and pick up all the drugs for the patients to do the cases. So, I would paralyze patients, I would wake them up, I would put them sleep. So, I learned a lot about drugs.

0:02:00 So, being an anesthesiologist was my interest in the pharmaceutical industry because I knew all the drugs, I knew all the side effects. So, I

think that was a perfect interest into coming to the pharmaceutical industry about 25 years ago. And then prior to that, I was in the military. I was in Air Force. I was a B-52 crew chief, and I flew all around the world. Being in the military, I learned about management and leadership, of mastering life versus death, and dedication and loyalty and relationships, to how to be on and manage projects. So, got most of my instruction while I was in the military. And then, since I've been training in pharmaceutical industry about twenty-five years, two years ago I took a course at Harvard Kennedy School in executive education. That way with these public companies, I can review the 10-Ks, 10-Qs, public filings, and budget, so my whole circle was starting in the military structure. Then anesthesiology is my trade, and then doing business at Harvard University Kennedy School, and I brought my career full circle to where I am now as the president, director, and chief medical officer at MyMD Pharmaceuticals.

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Rich Bendis: Fantastic. That's a great and diversified background, and you mentioned Georgetown like three times. So, we're based in Rockville, MD which is part of the BioHealth Capital Region. You're now in Atlanta, as you mentioned to me, but you know a lot about what's been going on in the Washington, DC area, so it's good that you have the familiarity here, Christopher.

Chris Chapman: Yes, I still have a home there, and every Tuesday I go back and forth between Maryland, obviously Baltimore, but I still go to Georgetown and run up and down the street to NIH and FDA, so I'm still a local person in that area now.

Rich Bendis: Very good. We'll learn more as we find out where you are with the company, but you're going to have a lot more interactions with the FDA as you continue to grow here.

Chris Chapman: Yes, no question about that. We look forward to it, Rich.

Rich Bendis: Thank you. Also we have Dr. Adam Kaplin, the CSO for MyMD. Adam, you want to give your background to the listeners?

0:04:00

Adam Kaplin: Sure. I'm a local boy compared to Chris, but I'll try to give you a sense of my background. I have been at Johns Hopkins for the past couple of decades. I did my MD-PhD and neuroscience residency training there and then joined the faculty. I retained an adjunct faculty status there, but three years ago I came over and began working full time with Dr. Chapman—with Chris and the other members of the team. Essentially, my specialty working at Johns Hopkins was both seeing patients who had mood disorders, particularly related to inflammation. So, I studied the way inflammation causes things like depression, and how depression causes inflammation and worsens diseases. Along the way, I had the privilege of trying to patent several of the discoveries that I made with my colleagues.

0:05:00 And it just became increasingly clear to me that the exercise of trying to get articles up on the shelf when we have literally millions of articles now in thousands and thousands of journals is a useful exercise, but ultimately getting it to the patient is what is the real rewarding thing, coming up with novel treatments. So, I have found that academia is a great place to come up with new ideas, but industry is the place to develop new drugs, so that led to my belief that if you can combine the two you're in the best possible shape. Now I work with Chris and the other members of MyMD to try to bring this drug through the various stages of research, usually through academic centers, and then take it hopefully along the way of eventually bringing it to the aid of patients, if we're fortunate enough.

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Rich Bendis: Right. It's great to see two prestigious institutions between Johns Hopkins and Georgetown, both in our region have some affiliation with MyMD and your background, so I'm sure that as alumni, they will be glad to hear about your path to potential success with MyMD. By the way, you mind if I call you Chris and Adam?

Chris Chapman: That's perfect.

Rich Bendis: That's okay? Great. Let's talk a little bit about the evolution of the company now then, Chris. How did MyMD get started? Who is really the key driver and visionary behind MyMD? And then talk a little bit about how Baltimore got selected as a location for this company.

Chris Chapman: Okay, Rich, I'll be glad to discuss that. Jonnie Williams, Sr. is the founder. He's the designer. He's the brainstorm behind the whole operation. Back in 2014 he developed an alkaloid, let's say from myosmine, and we determined at that point that we could take that product and change one carbon on it from a six-membered ring to five-membered ring, and because of that it would decrease side effects and we could give it orally. So, that's how we got started.

0:07:08 After he designed the drug, I did all the manufacturing, I did all the pre-clinical, I did all the tox all the way to Phase 2. The way the company evolved, we were a small company in Florida in 2014 developing the drug, and then in early 2021 we merged with Akers. Akers was a public company with a shell but no product. MyMD was a company with a product, but we were not public. So, we did a reverse merger. We merged the drug MYMD-1 into Akers, and we came out as the superior company and became MyMD Pharmaceuticals. That was a reverse merger that took place in 2021, and since that point we've been running the Phase 1, Phase 2s for the company.

Rich Bendis: Was that done through a SPAC, Chris?

Chris Chapman: No, it wasn't.

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Rich Bendis: It wasn't a SPAC, okay. So basically, you had a shell company that basically had shareholders, had some money, and you had a product and you were looking for money, and it was a perfect marriage.

Chris Chapman: Rich, I couldn't have said it better. They had a public company, they had the shareholders, and we had the drug. And I said we could reverse merger, so MyMD came out as the leader of the company of MyMD with the ticker of MYMD and cash in the bank and shareholders ready to go.

Rich Bendis: Well, that's not a bad way to do it. You got to the public arena much quicker than most companies do, but there's plus and minuses about being public. We can talk about that later. We don't have to go into that right now. Adam, let's talk a little bit about your interaction with Chris, how you two came together, what you saw is the major incentive for you to stay engaged with Hopkins but make this transition into this

pharmaceutical world that had no guaranteed success with it. There's no tenure in being the CSO of a small, public biotech company, is there?

Adam Kaplin: No, there isn't. [clears throat] Well, *now* you tell me that, Rich. Where were you a few years ago?

0:09:00

Chris Chapman: Now you know it. Now you know.

Adam Kaplin: [laughs] Let me tell you where I came in. I was fortunate enough to be asked to do some research on this interesting compound, MYMD-1. Through my involvement in that capacity, I learned about the research that had already been done at Johns Hopkins by Mario Caturegli, who is a brilliant pathologist and basic-science researcher. Chris and Jonnie had been working with him for several years, and what really attracted me, Rich, was the following. Mario had shown that this drug in mice and he's published these results slowed the aging process. Now, the reason why that attracted me is I've known for a long time as part of my education that if you get rid of all of cancer, for instance, you'll change the life expectancy by two, maybe three years.

0:10:06 And you say, "Well, gee! We invest billions of dollars and cancer is such a major killer. How could it only affect the lifespan by such a short time?" The reason why is as we get older, the risk of cancer goes up, so does the risk of heart disease and lung disease, and if one of those falls down, there's something right behind it waiting to come in, meaning it is aging that is ultimately the disease, if you will, that causes us to have all of the chronic conditions associated with aging and all of the suffering that we go through. So, knowing that and hearing that this drug could slow the aging process—and that doesn't mean it just extended life, because if we all could be 150 years old and demented, that's no fun. Risk of dementia increases with age. Age is the number one risk factor for dementia.

0:11:00 So, what he had actually shown is that this drug not only extended the lifespan, but preserved the health of the animals in the process. So, that was enough for me, when Chris and Jonnie came to me and showed me Dr. Caturegli'ss initial results, I was in.

Rich Bendis: When you say slow the aging process, I'm a little further along than both in you in that, but I hope it's not too late, if we can get this drug approved, to slow my process down a little bit.

Adam Kaplin: That's a great point. What Mario had done is he started when the mice were the human equivalent age of 60 and then went to essentially 100 years of age in the human equivalent of those mice. So, he wasn't waiting. He didn't start at birth or anything. He waited till people were past the midway point, if you will.

Rich Bendis: Well, there are a lot of people of my genre that wish you a lot of success with this drug, for sure.

0:12:00 Chris, let's talk a little bit about the relationship there is that exists between inflammation and disease and how that impacts the significance of MyMD in the work you're doing.

Chris Chapman: Yeah. Thanks, Rich. The focus on inflammation disease goes back to inflammatory and autoimmune diseases, and that disease space is growing with a significant aging population and unmet medical need right now. So, that's why we focused on inflammation. Just to go back to talk about what Dr. Kaplin talked about with Dr. Caturegli, is one of the first studies he did was Hashimoto's thyroiditis, which is an autoimmune disease, so we went from Hashimoto's thyroiditis, and then we did an MS study in the mouse to look at the MS in the mouse and in the brain. Then we looked at sarcopenia, so that was all three autoimmune diseases. So, that's how we got started with thyroiditis at Hopkins. And then we noticed that with sarcopenia and Hashimoto's thyroiditis, there was no disease moderating products. Everything is for symptoms, so we felt that we need something that could cure the person instead of telling them just to deal with the symptoms. So, that first study at Hopkins in thyroiditis made us realize that was the area we want to focus on: autoimmune disease and inflammation.

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Rich Bendis: That's interesting. People don't know how these interactions impact the body and bodily functions, and only through the research that you're going through—sometimes at the basic research level; like, Hopkins is the leading basic-research university in the world—does some of this actually materialize so that it helps give you a path forward for the direction

you're going to go with potentially commercializing a product. Adam, talk a little bit about how MyMD works, especially in diseases associated with inflammation, and what does it do that differs from current treatments that are out there today that people claim help?

Adam Kaplin: Great. So, no problem. I'll get that done in one sec. No, it'll take give me a minute to cover some of that.

Rich Bendis: You can have a couple minutes for that one.

0:13:58

Adam Kaplin: Okay, great. Essentially, what MYMD-1 does is it is able to block the production of inflammatory cytokines particularly TNF-alpha. What does that mean? When the body is invaded by anything—bacteria, fungus, virus—there's an initial immune response, and that is TNF-alpha, tumor necrosis alpha, goes up. That's what causes us to get a fever and shake, and it then sets off a whole cascade of activating other cytokines. Cytokine: cyto means cell; kine means kinetic movement. These are the two immune cells will communicate with one another. Like two neurons use neurotransmitters, two immune cells will use cytokines. And TNF-alpha is kind of the master regulator; it's the first one to go up.

0:14:54 And not surprisingly, given that MYMD has been shown to work in multiple different autoimmune diseases as well as aging in general, that this is a general process that gets going with whatever your favorite autoimmune disease is, or aging-related condition. So, what this is, is a new version of a drug that is the number one selling drug in the world is HUMIRA. These are—drugs like HUMIRA are anti-TNF-alpha treatments. They bind up and soak up TNF-alpha wherever they find it. They don't cross the blood-brain barrier. They're basically large antibodies or large receptors. But what's unique about our drug is, for the first time, these anti-TNF-alpha drugs that are $40 billion a year—just HUMIRA has been $20 billion a year prior to getting a generic—it still makes a ton of money because there's such a huge need for these illnesses.

0:16:01 And what is different about MYMD-1 is, unlike these other drugs which need to be given as an injection or an infusion, ours is oral. It's a small chemical, not a huge antibody. It is selective, meaning it only inhibits the autoimmune component of inflammation, meaning that when you first get an infection, even before your body learns to recognize, “Gee, this is

a particular bacteria to worry about," it has what's called an innate immune response. You don't want to take that out because you need that in order to prevent yourself from getting overwhelming infections. MYMD-1 doesn't affect this innate immune system. Instead, it affects the adaptive immune system, the one that gets tricked into thinking the body is foreign and starts attacking the body. So, that selectivity means safety to us.

0:17:00 And the last thing is it crosses the blood-brain barrier, also something about being a small molecule, is not only can you take it orally, you can be able cross the blood-brain barrier. And I will tell you I specialize in treating patients with the neuropsychiatric aspects of MS, multiple sclerosis, and you can't use any of these anti-TNF treatments for MS because it turns out that if you block TNF in just the body, not the brain because you don't get across the brain, you'll potentially risk increasing inflammation in the brain. So, we have oral availability; we're selective; we cross the blood-brain barrier; and that gives us a real advantage in an area that's very exciting because anti-TNF-alpha treatments are the big blockbuster treatments to really help patients with a number of autoimmune diseases.

Rich Bendis: When you talk about HUMIRA, it's not a bad poster child for you to try to emulate for what you're trying to accomplish in the world.

0:18:00 Chris, let's talk a little bit about the potential indications of patient populations and where you are in the clinical process with the FDA right now.

Chris Chapman: Just to go back so that it's clear, we did all the manufacturing. We did a one-year dog study, a one-year rat study. We did two Phase 1 studies prior to Phase 2, so everyone understand we have an IND for Phase 2 of rheumatoid arthritis if we want to. Well, the IND For Phase 2 and Hashimoto's thyroiditis, if we want to. So, that's the background. Now for the study we just completed, the sarcopenia Phase 2, we needed the background information, the two Phase 2 studies in dog study and the rat study to get to the Phase 2. The Phase 2 study was done, and the principal investigator was out of Hopkins, by the way, and he's very good colleague of Dr. Kaplin's. It was a 40-patient study: 32 active and 8 placebo, 28-day study. When I went to the FDA, I spoke with them about the study, they picked the mile-markers for the study.

0:19:00 They picked TNF-alpha, soluble TNF-alpha receptor 1, and interleukin-6. So, those were the three mile-markers for our endpoints. The good thing about the study is we sort of knew of a 28-day study that it was an outpatient study. Patients came in on day one, and they got pre-dose labs, and then for 8 hours they got PK, so we measured the mile-markers during that eight hours. Then they went home, came back on day 7 and had the same thing done, then on day 14, 21, 28. So, we sort of knew that if we get them a good blood PK on day 1, 7, 14, 21, 28, we may see some efficacy, and that's exactly what we saw with our results where the p-value for the TNF-alpha was .008; for soluble TNF-alpha was .002; and for interleukin-6, it was .003. So, we very satisfied with those results. The plan now is, we are in a very good position, so we have a Phase 2 IND to start rheumatoid arthritis if we want to, and we're putting together a final clinical safety report for the sarcopenia study.

0:20:03 That'll be ready by December or something like that, and then we'll present that to the Food and Drug Administration. When we do that, the FDA will decide on whether we do a long-term Phase 3 or what the next steps are. So, that's where we are. We're very satisfied that two days after we announced our Phase 2 results of sarcopenia, the FDA approved the IND for rheumatoid arthritis, so I think they saw the press release. But anyway, we're in a very good position now, so we have to start two Phase 2 studies, one with Hashimoto's thyroiditis, one with rheumatoid arthritis, and the big picture is see what the FDA decide about getting the Phase 2 studies for sarcopenia.

Rich Bendis: When you have multiple indications that your drug might be applicable to, and you're an emerging company that has resources that sometimes can be stretched, how do you decide and prioritize which direction you're going to go when you have you opportunity in to go a couple directions, Chris?

0:20:55

Chris Chapman: Rich, I couldn't ask that question any better. I'm being pushed and pulled. Some shareholders would like for us to go into rheumatoid arthritis, and some say finish sarcopenia. So, we're taking a conservative route, and that is we'll present everything to the Food and Drug Administration at the end of the year and decide on whether we continue with sarcopenia. The thing that Dr. Kaplin mentioned is there's no drug on the market for

sarcopenia. There's no medication. There's nothing to prove, so it's a wide-open space for this company. So, let's say if I had to make a choice, I would say we'll stay into that space and maybe do a long-term study, try to get accelerated approval in sarcopenia because there's no competition.

Rich Bendis: I guess the benefit to it also, and Adam's going to answer a little bit further, is that I know other companies that have been able to have platform technologies, and you have licensing opportunities or strategic partnerships that you can develop with multiple companies if you so choose to go that direction. But Adam, I'd like to get your opinion on this.

Adam Kaplin: The only thing I just wanted to add to what Chris had said is to give him full credit here. He didn't just pull this out of a bag of tricks.

0:22:01 He actually saw the opportunity to partner with Charles River and run our drug in their assay, their model of rheumatoid arthritis. And it's a really good model because it basically takes antibodies against joints, injects them into rats, so you see the inflammation in the joints by finding the right group to do those experiments. Chris came back and said, "Oh, by the way, let me show you this." And the data just knocked your socks off. It really showed the best response, better than what Charles River had seen with other anti-TNF-alpha treatments. Our drug really just dramatically shut down the inflammations. So, that gave Chris the opportunity to say, "Hey, this is a great place to be," and to get everybody behind the idea of this is an obvious target given the power that it has in the animal model.

0:23:00

Chris Chapman: Yeah, thanks Adam. You may want to mention that in that study that Dr. Kaplin's talking about, we compared MYMD-1 to Enbrel, and Enbrel lowered inflammation by 37%, and MYMD-1 lowered it by 47%. So, we beat him.

Rich Bendis: Yeah. You'll take 10%, right?

Chris Chapman: I'll take it every day.

Rich Bendis: Let's talk a little bit about Supera-CBD, and a little bit about how Supera-CBD functions, and who are the potential beneficiaries of that. We'll start with Adam.

Adam Kaplin: Supera-CBD, the name is loaded. We're suggesting that this is a superior version of CBD. I don't think I'm telling any secrets out of turn here with the name Supera, but essentially it takes CBD, the exact molecule of CBD, and it takes one carbon away, making a six-membered ring into a five-membered ring, and that has made an enormous difference in terms of how this works.

0:23:55 The important thing to understand the first thing about the difference is that CBD is a cannabinoid, meaning it is found in cannabis, which is marijuana. It's the secondmost abundant cannabinoid, the first being THC. THC binds and activates inside of us the CB1 receptor. That's the intoxicating receptor, but the CB2 receptor is the one on all the immune cells. That's the one that it presumably is involved in anti-inflammatory and anti-pain effects. And perhaps there's evidence to say many other things, such as anti-epilepsy and the like. So, the first thing we knew is that it doesn't affect CB1, which is good because it's not intoxicating just like CBD is not intoxicating, which is why it's not a Schedule I drug. But the other thing we found out is just moving that one carbon made it 8,000 times more potent at activating CB2.

0:25:01 It just means that you could use a lower dose and get a potent activation of the CB2 receptor. And again, since everybody knows that CBD is safe, and people are taking it in large doses, if you could deliver something that is much more effective, a much less lower dose, that would be good. And then the last thing we know now is that experiments being done back at my mother institution have shown that in a model of inflammatory pain—inflammation is involved in a lot of different types of pain—that this drug very rapidly leads to anti-pain effects in an inflammatory model of pain, and that effect is specific to the heat-induced effects. Heat turns out to be the same receptors that do spicy food is involved in heat.

0:26:00 So, this called a trip-channel, and these channels are involved in a lot of pain. It doesn't cause numbness so you wouldn't lose the ability, if you had pain in your hand, to use your hand. But it does shut down that pain-induced heat sensitivity. What is really dramatic to us is that in this

model, CBD had no effect whatsoever till we saw as big a difference as you could hope for in the potency at CB2 receptor, this safe receptor involved in inflammation, and two, we have now demonstrated with our colleagues who have done the research that Hopkins that this shuts down, significantly ameliorates pain, whereas CBD does nothing in that model. So, we *are* superior in this respect. We're not just boasting with the name.

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Rich Bendis: So, Supera-CBD: you're not superior, but it is reflected in what you're classifying it as. I see that Chris has got a comment on this, but also Chris, after your comment, I'd like to know, does FDA have a special division for anything related to CBD? Or, since you're dealing in pharmaceuticals, does that get into the general pharmaceutical area?

Chris Chapman: That's a good question. That's what I was going to comment on. What we did is, Rich, we decided—we took the structure of Supera-CBD and took it to the DEA, and the DEA determined that during all our development security CBD was a non-controlled substance. In other words, we can do all our work with it early on, and it's not controlled. So, that gives us a big advantage. There is a division in the FDA just to deal with CBD and different products like that, so I think we're pretty good shape having that ranking now.

Rich Bendis: Yeah, and it's nice to have the DEA's blessing, right?

Chris Chapman: Yes, it is. It's very nice. Adam, you want to say something about the DEA?

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Adam Kaplin: The only thing I would add is, and I know I'm putting the cart way ahead of the horse here, but we have shown that we don't have any activity at the CB1 receptor. Because CBD doesn't have any activity at the CB1 receptor, it was and therefore doesn't cause intoxication of any kind. CBD was able to come off scheduling. It is a drug that is prescribed. It was developed to treat a rare form of epilepsy in kids. EPIDIOLEX and CBD that's purified as opposed to synthesized, which is what ours is, because ours is a new chemical entity with a patent. But essentially, my best guess is that since we don't have any effects so far that we can even postulate that are intoxicating, my greatest hope is that we will preserve this lack of

scheduling and certainly don't anticipate this will be a controlled substance in the way that other painkillers currently available, like opiates and the like. This should be much safer.

0:29:00

Rich Bendis: For the listeners, I'm talking to Dr. Christopher Chapman, President, Director, and Chief Medical Officer from MyMD; and Dr. Adam Kaplin, Chief Scientific Officer for MyMD. We've been talking a lot about the science, but let's talk a little bit about this entrepreneurial journey that you both have been on right now. This might be something off script a little bit, but it's something the listeners are going to be very interested in. I'd like to know about as you've been going through this journey, which is not an easy one, what are some of the surprises that you both have been surprised by? And what do you see as some of the greatest challenges that you've overcome but yet have other major challenges to overcome before you successfully enter the market? This is a question for both of you because you're both focused in a little different area in working with MyMD. So, let me start with Chris. Chris, talk about this journey, surprises, and the major challenges in front of you.

0:30:06

Chris Chapman: That's certainly a good thought for us, Rich. For me, general toxicology is a major challenge because to development a drug, you need to go through manufacturing, and before the FDA will give you an IND, you've got to do your tox work. And you never know. You're doing a 7-day maximum tolerated dose, doing 28-day study with the rat and dog; if anything goes wrong, you got to repeat those studies. And everything that can go wrong will go wrong; so, don't worry about it, just keep trying. So, those are the major challenges. I'm up at night making sure that 28-day study works because unless you get 28-day study, you can't get an INDs, so that tox is a major challenge for us *always*. And then once you start study, once you start a Phase 1 or Phase 2 or whatever, there are subtle little headaches. And I'll just give you a good example that I thought about if a question like this ever came up. For this study we did, we just finished, it was Phase 2. We had 39 patients and needed one patient to complete the study.

0:31:00 We had a patient lined up to go. They had done a pre-labs and everything was fine. They came in to be dosed. I won't to talk about the site they came to, but everybody was waiting. So now, it's the last patient in the study. The patient comes into the study that day and said, "I don't want to be in the study." So, that set us back 15 to 30 days because they had to get another patient, then screen them to get them on schedule. So, those are kind of things that you look at and say, "Well, that's a clinical trial." But it worked out. We got the last patient for the study, the results were good, so we're very happy about that.

Rich Bendis: Normally they say it's generally going to take twice as long and twice as much money. How true is that for you guys?

Chris Chapman: It takes twice as long and twice as much money.

Rich Bendis: [Both laugh] Okay. We'll talk about future challenges, Chris, in a second. Adam, what about you as we go through to where you are today, and things you've had to overcome, and what do you see as the major hurdles in the future?

Adam Kaplin: I know this is going to come as a complete shock to everybody, but the one thing that I was surprised about, naively, that is the same in academia and industry, is that politics are involved in everything you do.

0:32:04 And whether it's trying to get something through the FDA or trying to find the best approach to go forward, there's logistics and politics involvement everything. But what I have been really glad about is that humming from academia, I still maintain that our best chance of making meaningful developments going forward to really help mankind is to use the novel ideas and creativity that's in academia with the know-how of people like Chris to get things through the regulatory and development process, fundraising and stuff. But being a part of it makes a difference.

0:32:53 I'm a neuropsychiatrist, and it turns out that MYMD-1, as we were developing it, had some characteristics that looked to me like it would suggest it would help with depression—inflammatory depression, we don't have time to get into it. We did experiments, and sure enough, it is an anti-inflammatory that also will treat depression if it's inflammation abuse depression. So, you say, "Okay, gee, that's great because now we know another aspect of this drug that we wouldn't have known if I hadn't been a neuropsychiatrist interested in this." But I will tell you, and this is

the hint of what's going to be coming down the road, working with my colleagues, all the same people, Dr. Caturegli and the like, we are now learning by studying MYMD, more about how antidepressants work in general. I love the give and take. I love the fact that you can still be doing important work that crosses that division between industry and academia as long as you keep in mind the first principles of what your main goals are.

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Rich Bendis: I would imagine one of the big differences is in academia, publications and patents are important, but in industry it has to go beyond the publication and the patent.

Chris Chapman: Yes, you've got to get through the FDA.

Rich Bendis: And to the marketplace. So Chris, you're leading into the next one. We talked a little bit about the challenges; let's talk about your future goals, milestones, and what are the major hurdles you see going forward, whether it's related to talent, whether it's fundraising, regulatory, clinical, whatever it might be.

Chris Chapman: With talent, we're surrounded by some of the best talent. One of the things I should have mentioned earlier was in the early point of my career, I was the medical director for Quintiles, which is now IQVIA, which is the largest CRO in the world. I used to run the medical development for that, so because of that, for all the projects I use going forward, we use IQVIA. So, I'm pretty safe about Phase 1, Phase 2, Phase 3, because I think they carry a nice spot for that, and then for the tox work, Charles River does a very good job for that.

0:35:00 And then with talent, one of the other parts of human talent is because of Dr. Kaplin, I was able to find a very good person out of Hopkins. She's the executive vice president of drug development. She was trained by Dr. Kaplin at Hopkins, so she fills in a lot of spots for me in drug development. And then I have a good CMC person, a good tox person. My tox person, Gary Wolf has been with us for about six years, so I can rely on that kind of talent to make sure I get these projects through. Other challenges, of course, is regulatory. Whenever we finish a Phase 2 or whatever, we got to go to the FDA. And you may get five minutes with the FDA. You may get six minutes, but it has to be fast. You need the

team in order to be ready to go. You don't know what the results would be, but I can tell you the last time I spoke to FDA about a project. I had two projects, and we had four on my side, and they had sixteen people from FDA, so went into the meeting, and we want attention, so the FDA said, “Dr. Chapman, we're going to do this drug like the other drug.”

0:35:59 And I could have fell out because it's exactly what I wanted. You see, so things like that. You have good days, and we always worry about when you have a product at the FDA in IND or Phase 1 and Phase 2 or whatever, to get a call on a Friday from the FDA and said either stop the study and move forward. So, that Friday before the third day is always really hard for us when we go forward. The whole thing is always fundraising. So, we go to a lot of meetings and have to keep cash in the company to sustain it. So, that’s always a challenge, and we have a pretty good finance team to help us with that part of managing the company.

Rich Bendis: You did a great job Chris. I mentioned four things and you covered all four of them, so if you can respond to the investors in the same way you're going to have no trouble raising capital.

Chris Chapman: Thank you very much, Rich.

Rich Bendis: Adam, you're based in Baltimore, and you're right in the BioHealth Capital Region, so talk a little bit about how MyMD has really been able to take advantage of the resources you have in your own backyard, whether it be at Hopkins, other resources that you find that are beneficial to you in Maryland or in this region that you've been able to take advantage of.

0:37:02

Adam Kaplin: It's a great question, and obviously as Chris is mentioning, whether it's getting in a car and driving out to the FDA to meet with him in their offices, whether it's going to NIH having discussions with them, whether it's being located right across the street with a connecting bridge to the basic-science building where research is done at Johns Hopkins Medicine campus, we are in the biotech park right across the street. It’s very convenient for us to be able to get access to the brilliant collaborators that we have and with whom we're able to consult to get their information. I will tell you that were we not in this particular situation, we might not be here now. And I say that only, not because this isn't a

great drug and the like, but we'd gone through COVID during the evolution of this particular company.

0:38:02 And if it wasn't for the perseverance of all involved—and props to Chris for being the head of the pack here to keep us on track—and if we didn't have such good access to the opportunities we have in this area, it would have been very difficult to get as far as we have in the course of all of the closures that happened in the first couple of years of our development. So, we're very fortunate to have the kind of leadership we have, but also to have the opportunity, as you say, to be in research central where we're located here.

Rich Bendis: Yeah, I'll just follow up a little bit, Chris, because it sounds like you're on the frontline dealing with a lot of existing and potential investors, and a lot of times people in our BioHealth Capital Region get pressure from the investors to move Boston or San Francisco. I just wondered if you've had to fend off that much and be able to defend it very easily based on all the resources you have available to you in the Baltimore and the Maryland area.

0:39:04

Chris Chapman: Yeah, Rich, we've been pretty fortunate because being in Baltimore, we're 30 minutes to Washington, DC, and 2 ½ hours to New York, so we're pretty good being next to Johns Hopkins. Everybody likes that we're an incubator at Johns Hopkins, so that works out very well for us. All the investors like that, and sometimes they think we are Johns Hopkins, so we don't say no.

Rich Bendis: That works to your advantage most times.

Chris Chapman: Yeah, and we always say we got a staff member down at the capitol, so what can they say?

Rich Bendis: Well, the other thing is, then you say, "We have a great relationship with the university, but we're industry-driven. We want to get to the market. We want to make you money. Our product is scalable, and we think we can get a great return for your investors."

Chris Chapman: Exactly.

Rich Bendis: I know we've gone on a lot about MyMD, both of your backgrounds, where you are with the science. Is there anything that we didn't cover that either of you feel that the listeners would be interested in knowing?Chris?

0:39:57

Chris Chapman: Well, I just want to make a very crystal clear, Rich, and you've been in the industry for a long time. You know a lot of biotech companies, and for a company our size to have three INDs for three Phase 2 studies, we're in pretty good shape. I feel very good about the company. I worked for a lot of companies that do not have INDs, do not have Phase 1, Phase 2. So, I feel very good about the fruits of the company because of those aspects.

Rich Bendis: Yeah. Nice thing is you're not a one-trick pony, and if you have to pivot, you'll you have something to pivot on. How about you, Adam? Anything you'd like to close with the listeners?

Adam Kaplin: I would just say if you had told me even five years ago I'd be working with the likes of the people I'm working with on a drug that slows aging and that is a better widget than the currently number one selling drug. I'd say, “Well, pooey! There's no way that's going to happen.” So, the fact that has happened, I just feel privileged to be able to be in this position.

0:41:01

Rich Bendis: Well, whenever you get to the human clinicals and you need candidates to help stop aging, let me know. I'll raise my hand. I'll be one of your guinea pigs.

Chris Chapman: Gotcha, we'll sign you up.

Rich Bendis: Yeah, [laughs] right. I just want to thank both of you, Dr. Christopher Chapman, President, Director, Chief Medical Officer; and Dr. Adam Kaplin, Chief Scientific Officer for MyMD, for being on *BioTalk*. And we want to come back to you after you continue to go through this clinical process and closer to market or in market and do an update with you. So, thank you both for being on *BioTalk*.

Chris Chapman: Thank you. We appreciate and look forward to it.

Adam Kaplin: Thanks, Rich. Thanks for all the guidance and the opportunity.

Narrator: Thanks for listening to *BioTalk* with Rich Bendis.

End of recording