Why Your Immune System Never Fully Recovers Transcript

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Introduction to immune monitoring concerns

The research shows that the vast majority of patients receiving these drugs over 85% in one study don't have their immunoglobulin levels checked before treatment begins.

And many don't get monitored afterwards either. We are essentially flying blind. We don't know who is at highest risk for lasting immune damage. We are not identifying the warning signs early enough.

And we are not having honest conversations with patients about what the long-term trade-offs might be. I'm Dr. Vesmair Phan, a physician on a mission to help you break free from symptom management and step into a life of thriving health.

Together we will uncover simple, powerful ways to prevent disease, restore energy and take control of your health naturally. If you're ready to stop managing illness and start building vitality, you're in the right place.

Your prescription for vitality starts now.

Anti-CD20 therapies and B-cell memory

What if the medication designed to save your kidneys is quietly erasing your immune system's memory and no one's telling you about it? I want to share something that stopped me in my tracks when I came across a new research published just weeks ago.

It's the kind of finding that makes you wonder how many people are walking around right now years after their treatment ended with an immune system that can't remember how to protect them.

Here's what we are dealing with. There's a class of medications called anti-CD20 therapies. Rituximab is the most common one. And they are used for everything from kidney disease to autoimmune conditions to certain cancers.

These drugs work by targeting B cells, the immune cells responsible for producing antibodies and remembering past infections. When you get vaccinated for something like tetanus or hepatitis B, it's your B cells that create the memory so your body knows how to fight it next time.

Now, doctors have always known these medications suppress the immune system, temporarily. That's kind of the point for people with autoimmune disease where the immune system is attacking the body's own tissues.

The assumption has been stop the medication and eventually the immune system bounces back. But what if that assumption is wrong? Stay with me here, because this is where the research gets unsettling.

A study published in Frontiers in Immunology this December followed children with nephrotic syndrome, a kidney condition, who received anti-CD20 treatment.

And they didn't just follow them for a few months, they tracked these kids for an average of 6 and a half years after their last treatment. What they found challenges everything we thought we knew about immune recovery.

Long-term immune depletion after treatment

The children's immune systems never fully came back. Specifically, their memory B cells, the cells that remember how to fight infections you've encountered before, remained significantly depleted years after the medication was stopped.

We are not talking about a minor dip, we are talking about cells that were supposed to protect you for life staying at a fraction of normal levels. But here's what really got my attention.

Most of these children couldn't maintain protection from vaccines they'd already received. Think about that for a moment. These kids had been vaccinated against tetanus and hepatitis B, their immune system had created memory cells, and then the medication essentially erased those memories.

Even after revaccination, many of them couldn't reach protective antibody levels. Four of these children developed such severe immune deficiency that they now require ongoing immunoglobulin replacement therapy.

essentially infusions of antibodies from donors because their own bodies can't make enough. That's a significant intervention and it's not something these families signed up for when treatment began.

And this isn't an isolated finding. I started digging into the research and what I discovered is that this pattern shows up again and again. A study from Massachusetts Journal Hospital looked at over 1,500 adults who received rituximab for various autoimmune and kidney diseases.

2% developed what researchers call persistent B-cell depletion, meaning their B cells never came back even two years after their last dose. Four years out, only 30% of those patients had any B-cell recovery at all.

And even in those who did recover, their B-cell counts remained extremely low, a median of just 7 cells per microliter when normal is hundreds.

How rituximab affects B-cell recovery

The clinical consequences were serious. 47% had recurrent infections, 57% experienced severe infections, and 30% died, mostly from complications of their chronic conditions.

But the immune suppression certainly didn't help. Another international study looking specifically at pediatric patients found that 44% developed low immunoglobin levels after rituximab treatment, with some children showing onset within the first six months.

Children with autoimmune brain conditions were the worst. 71% developed hypogammaglobinemia and their immune suppression was more severe and persistent.

So what's actually happening in the body? This is where understanding the mechanism helps us see the bigger picture. Rituximab and similar drugs target a protein called CD20.

It triggers the destruction of those B cells. The theory is that once you stop the medication, new B cells should regenerate from stem cells in the bone marrow.

But that part does happen sort of. The translational B cells, the young cells that are still developing, do come back relatively quickly. What doesn't come back are the memory B cells, particularly something called switched memory B cells.

These are the specialized cells that hold long-term memory for past infections and vaccinations. Why? Researchers aren't entirely sure. The possibilities include damage to the bone marrow's ability to produce these specialized cells, chronic inflammatory suppression of the environment where B cells mature, or perhaps something about the medication's effects that we haven't yet understood.

What we do know is that the longer someone is on these medications and the more doses they receive, the greater the risk of lasting immune damage.

Why monitoring is often missed

Patients who also received other immunosuppressive drugs or steroids were at higher risk. And there may be genetic factors that make some people more susceptible.

Now, I want to be clear about something. These medications save lives. For people with aggressive autoimmune conditions or certain cancers, rituximab can be the difference between life and death.

Between a functional kidneys and dialysis, I'm not suggesting anyone stop a medication that's keeping them alive. But here's what's troubling me. The research shows that the vast majority of patients receiving these drugs, over 85% in one study, don't have their immunoglobulin levels checked before treatment begins.

And many don't get monitored afterwards either. We are essentially flying blind. We don't know who is at highest risk for lasting immune damage. We are not identifying the warning signs early enough.

And we are not having honest conversations with patients about what the long-term trade-offs might be. This is where I think a more complete approach makes such a difference.

When we look at patients who have received these treatments, we need to be thinking about more than just whether the original condition is in remission.

One case in particular has stayed with me. A woman in her late 50s came to us after years of retuximab treatment for lupus affecting her kidneys.

A patient case and immune support strategies

Her lupus was well controlled but she was catching every cold that went around and infections that should have cleared in days were lasting weeks. Her previous doctors had noted her low immunoglobulin levels but hadn't connected the dots.

When we did comprehensive testing, we found exactly what the research predicts. Her memory B cells were essentially absent. Her body couldn't remember how to fight pathogens it had encountered dozens of times before.

She'd lost protection from vaccine she'd received as a child. We've worked together on supporting her immune system through every avenue we could. Addressing gut health because that's where so much immune function originates.

Optimizing her nutrition with a focus on the micronutrient sat support B-cell development. Reducing her toxic burden since chemicals can further stress an already compromised immune system.

And monitoring her closely for any signs of infection that needed early intervention. She is doing much better now. Not perfect, some damage appears to be permanent.

But she has a clear picture of what she is dealing with and a plan for protecting herself. That matters. So what should you take away from all of this?

First, if you have ever received anti-CD20 therapy, Drituximab, Ocolezumab, Ofatimumab or similar medications, understand that your immune system may need support even years after treatment ends.

Don't assume everything goes back to normal automatically. Second, ask your doctor about testing. Immunoglobulin levels are a simple blood draw. B-cell subset analysis is more specialized but increasingly available.

At minimum, anyone who's received these treatments should know where they stand. Third, pay attention to infections. If you're catching everything that goes around, if infections are lasting longer than they should, if wounds aren't healing normally, these are signals that deserve investigation.

Key takeaways for patients and clinicians

And fourth, remember that the immune system doesn't exist in isolation. It's connected to your gut health, your nutritional status, your sleep, your stress levels, your toxic exposures.

Supporting immune recovery means supporting the whole system. There's still so much we don't know. Why do some people recover fully while others don't?

Are there interventions that could accelerate B-cell recovery? How do we identify who's at highest risk before treatment begins? These are the questions researchers are starting to ask.

But there are also questions we should be asking for every patient and every appointment before we assume that stopping a medication means the story is over.

Your immune system is remarkable. It has an extraordinary capacity to remember and protect and heal. But it's not invincible. And the more we understand about what can damage that capacity, the better we can protect it.

If you have received immunosuppressive therapy and you are wondering what your immune status looks like, this is exactly the kind of investigation we do at Kidney Institute.

We look at the whole picture, not just one piece. Visit DrBisma.com to learn more about personalized approach to your health. The body's ability to heal is profound, but sometimes it needs us to pay attention to what's lost so we can help restore what's possible.

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