



Understanding Chromosomal Abnormalities in CLL Patients

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Andrew Schorr:

In CLL, we have people with these chromosomal abnormalities, right? And that's—am I right, that's where we get into the 17p and the 11q?

So, Susan, just briefly these—take those numbers and letters. 11q, you know, 13—forget which one, 13.

Dr. Wierda:
13q.

Andrew Schorr:

13q and then 17p. Now, we're having medicines that line up with some of these somebody types. But how is that tested? How do you know, and what does the number and the letter mean?

Dr. Leclair:

And you notice then he complains that I talk too long.

When you have a chromosome—when we take your cells, we take your chromosomes, and you can count them. You have 23 pairs of chromosomes, and literally chromosomes to a greater or lesser extent you can describe as an X. So just mentally put an X in your head right now. Not all of them are perfectly balanced, the sizes of the X.

The top sometimes is smaller than the bottom, but what we've done is we've identified the top half of the chromosome, the part that's the upper part of the X, is identified with the letter p. I find it easy to remember p for petite, because it's typically the smaller half.

The bottom is called q, because I think scientists don't like people to make it easy. So if I cut off a piece of chromosome 13, and it's the top half that I cut off, well, then I've deleted something from 13p. If I cut off something from chromosome 22, and I cut off part of the bottom, then I've cut off part of 22q. So those—that alphanumeric...

Andrew Schorr:
Location.

Dr. Leclair:

...responds—is a location on your—on a chromosome.

Andrew Schorr:

Okay. We got it.

Dr. Leclair:

What has to happen after that is you have to find out what inside there is broken.

Andrew Schorr:

What's inside. Well, Bill, okay. So you now, in some of your conditions, you and your hematology colleagues have medicines that are starting to target certain chromosomal abnormalities, right?

Dr. Wierda:

Correct.

Andrew Schorr:

Okay. And so this result that Susan is talking about helps you determine which medicine might line up with which patient.

Dr. Wierda:

Correct. For CLL, that's a little bit less of the case yet. For example, we don't have any specific drugs that work particularly in 17p or particularly in 11q. We have venetoclax (Venclexta), which is now approved for relapsed patients with 17p, but that drug works across all, all karyotypes.

So it's not that it only works in 17p-deleted patients. It's that it was tested initially in 17p, and we expect a broader approval for that drug.

So there isn't really any specific chromosome abnormality right now that is targeted with a particular treatment. We do know that patients who have an 11q are very, very sensitive to chemotherapy, and they do very well in terms of responses, having a high response rate when they're treated with chemotherapy.

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