The Evolution of CLL Treatment

Doctors once relied mainly on chemotherapy to treat chronic lymphocytic leukemia (CLL), but now many more treatment options are available. That momentum continues to build.

Chemotherapy

Mid-20th century [1]

Chemotherapies work by killing rapidly dividing cells in the tumor and normal tissue. Chemotherapy is used less often now that other, more targeted treatment options are available.[2]

Immunotherapy

2000s [3,4]

Immunotherapies boost the body's own immune response or use immune proteins made in a lab to attack the cancer. They may be given alongside chemotherapy or targeted therapies.[5]

Targeted therapies

2014 [6]

Targeted therapies interfere with proteins the cancer needs to grow.[7] In 2014, the FDA approved a drug that targets the BTK protein,[6,8] which drives CLL's growth.[9]

More treatment options have become available, including drugs targeting the PI3K and BCL-2 proteins,[10,11] and drugs designed to be more selective for BTK.[12]

Combo targeted therapies

2019 [13]

In 2019, the FDA approved combining an immunotherapy with drugs that target either BTK[13] or BCL-2.[14] Seven years later, it approved using BTK and BCL-2 targeting therapies together.[15]

New therapies

Future

New therapies now under development:

- New versions of BTK-BCL-2 therapy [16]
- Drugs that degrade the BTK protein, rather than inhibiting it [17]
- More selective, potent drugs that target BCL-2 [18]
- Immunotherapies that help improve immune recognition of cancer. [19]

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