Understanding the Different Stages of Liver Cancer

by KRYSTINA OSTERMEYER

Stages of Liver Cancer

When you're diagnosed with liver cancer, your cancer is given a stage. This stage may not mean a lot to you unless your oncologist explains what it means.

So, let's discuss the various stages of liver cancer, staging systems and what they mean for you.

The American Joint Committee on Cancer (AJCC) TNM Staging System

The AJCC TNM system is a standardized system that summarizes various information about how far the cancer has metastasized or spread. This system is useful because it is universal – it gives any doctor who comes in contact with the patient an idea about the prognosis.

We will discuss this system in much greater detail further in the article, as this system is used most often when staging liver cancer.

Barcelona Clinic Liver Cancer (BCLC) Staging System

While the TNM system evaluates the size, position, and metastases of liver cancer, the BCLC system helps to evaluate the function of the liver.

It is used in conjunction with the TNM system, and it helps to evaluate which treatment will work best.

The Child-Pugh System

Similar to the BCLC staging system, the Child-Pugh system evaluates the functionality of the liver. It can also be used in patients with cirrhosis – and in patients with liver cancer *and* cirrhosis.

It evaluates five factors: blood levels of bilirubin, albumin, and prothrombin, the presence of ascites, and whether the liver disease is affecting brain function.

Cancer of the Liver Italian Program (CLIP) System

The CLIP system uses the stage from the Child-Pugh system, as well as several other factors, to determine an approximate survival rate for liver cancer.

The Okuda System

The Okuda System also measures prognosis. According to Radiopaedia, this system evaluates four factors in

determining prognosis: ascites, a bilirubin level >3mg/dl, albumin <3mg/dl, and disease involving >50% of the liver.

TNM System, In-Depth…

Now that we've discussed the various staging systems. Let's discuss the TNM system in greater depth – again, this is the most commonly discussed system.

Your physician will likely use this system initially, and use the other methods to evaluate your liver cancer further.

TNM stands for:

- **Tumor (T)**: the "T" describes the amount and size of tumors that are present. They are measured in centimeters and takes into account whether they have spread into nearby blood vessels or organs.
- **Nodes (N)**: the "N" describes the spread to regional lymph nodes.
- **Metastasis (M)**: the "M" discusses whether the cancer has spread to distant parts of the body.

Now, this all sounds pretty simple. However, it does get a bit more complicated. Each letter has additional numbers or letters assigned to it; the compilation of these letters and numbers provides details to anyone who reads your stage:

- The numbers 0 through 4 are used to describe severity. The higher the number, the higher the severity.
- The letter "X" is assigned if it "cannot be assessed" – this is used when information is unavailable.

Here are examples of how the letters and numbers are assigned to the TNM groups – and then, how it is all put together.

T Groups

- **TX**: primary tumor can't be assessed
- **T0**: no evidence of primary tumor
- **T1**: a single tumor is present; this tumor has not grown into surrounding blood vessels
- **T2**: a single tumor is present, but this tumor has grown into blood vessels, OR there is more than one tumor present, but none of the tumors is larger than 5 cm across
- **T3a**: there is more than one tumor present, and at least one of the tumors is larger than 5 cm across
- **T3b**: one of the tumors present has grown into either the portal or hepatic vein
- **T4**: the tumor has grown into a nearby organ or the tumor is growing into the visceral peritoneum of the liver (the thin outer layer the liver)

N Groups

- **NX**: the regional lymph nodes can't be assessed
- **N0**: the cancer has not spread to the lymph nodes
- **N1**: the cancer has spread to regional lymph nodes

M Groups

- **M0**: the cancer has not spread to distant lymph nodes or organs
- **M1**: the cancer has spread to distant lymph nodes and/or organs. It is most common for liver cancer to spread the peritoneum of the belly, the bones, and the lungs.

Putting It All Together

Your physician utilizes many diagnostic tools to determine the T, N, and M groups, such as CT scans, MRIs, surgery, and pathology.

Once the T, N, and M groups have been determined, they are combined and an overall stage is assigned. The overall stage uses Roman numerals I through IV, which is stages 1 through 4.

- **Stage I**: *T1, N0, M0.* There is only one tumor (although it can be any size) and it has not grown into blood vessels. Cancer has not spread to nearby lymph nodes and has not spread to distant organs.
- **Stage II**: *T2, N0, M0.* There is a single tumor of any size that has grown into the blood vessels, OR there are several tumors that are 5cm or less across. Cancer has not spread to nearby lymph nodes or distant organs.
- **Stage IIIA**: *T3a, N0, M0.* There is more than one tumor present, and it is larger than 5 cm across. Cancer has not spread to nearby lymph nodes or distant organs.

- **Stage IIIB**: *T3b, N0, M0.* There is more than one tumor present, and at least one of the tumors is growing into the portal vein or hepatic vein. The cancer has not spread to nearby lymph nodes or distant organs.
- **Stage IIIC**: *T3c, N0, M0.* There is more than one tumor present, and at least one of the tumors is growing into a nearby organ, OR one of the tumors is growing into the outer covering of the liver. Cancer has not spread to nearby lymph nodes or distant organs.
- **Stage IVA**: *Any T, N1, M0.* There can be any number of tumors present in the liver, and they can be any size. Cancer has spread to the nearby lymph nodes, but it has not spread to distant organs.
- **Stage IVB**: *Any T, any N, M1.* There can be any number of tumors present in the liver, and the cancer has spread throughout the body.

Liver Cancer by the Numbers

It is important to note that the amount of people being diagnosed with liver cancer has more than *tripled* since 1980. However, it should be reassuring to note that it is on the decline – in recent years, young people have become less likely to be diagnosed with liver cancer.

In the United States in 2017, it was estimated that there was going to be 40,710 new cases of liver cancer – 29,200 in men and 11,510 in women. 28,920 were expected to die from liver cancer.

It that number seems shockingly high, liver cancer is even more common in Southeast Asia and sub-Saharan African. In these areas, liver cancer is the most common type of cancer. Worldwide, there will be 700,000 cases of liver cancer diagnosed annually.