

Press Release

August 26, 2019

Solving the transportation problem when faced with uncertain data: A novel algorithm

Liver cancer affects hundreds of thousands of people annually, and there are few viable therapies for the advanced stages of its most common form— hepatocellular carcinoma. A drug called sorafenib improves overall survival in patients with advanced hepatocellular carcinoma and is considered a standard treatment, but questions remain regarding how we can increase its effectiveness. Right now, the two available clinical trials show that sorafenib treatment increased overall survival by 6.5 to 10.7 months.

During the past decade, scientists began to test whether a radiological procedure called transarterial chemoembolization (TACE) can raise patient survival even further. This therapy involves blocking blood vessels leading to a tumor, depriving it of blood and thereby killing the malignant cells. When performed alone, TACE could stop tumors from spreading. However, only a few experiments have directly tested how addition of TACE to a sorafenib drug treatment would fare in improving survival compared with sorafenib alone. These experiments do not agree, with the only major clinical trial finding no increase in patient survival after combining TACE with sorafenib. However, adding sorafenib after TACE seems to increase indicators of therapeutic effectiveness.