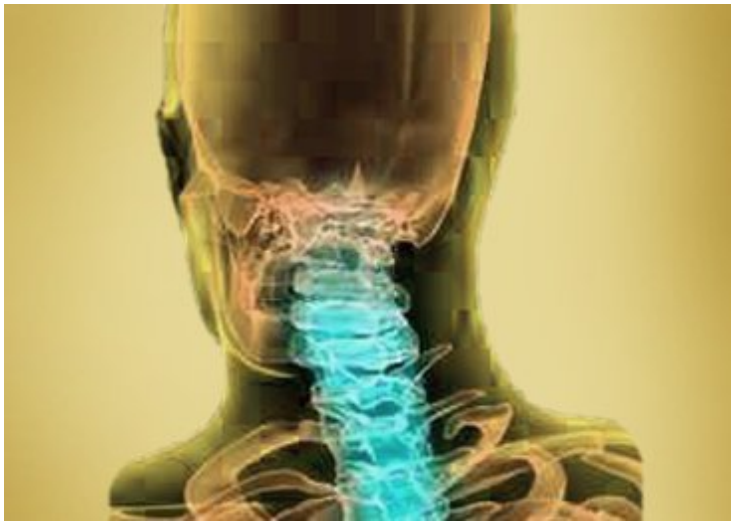
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# Mitra Biotech publishes key finding for head and neck cancer

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Bangalore based Mitra Biotech recently published important findings the treatment of in Cancer Research, a journal of the American Association for Cancer Research. Although a large majority of head and neck cancers have a deregulation of the PI3K/AKT/mTOR pathway, Mitra Biotech has indicated through data,that deregulation of this pathway does not necessarily signify that the tumor is dependent on it for survival and progression. Even though treatment with mTOR inhibitors results in robust activity in certain cancer cell lines, they are not effective in all patients. Researchers are currently using biomarkers to try to stratify patients for response to mTOR inhibitors.

"However, these technologies have limited success due to their inherent limitations in lack of clarity in distinguishing driver mutations in pathways from those of passengers," said Dr. Pradip K. Majumder,CSO, Mitra Biotech, Bangalore, India.

The researchers led by Dr. Padhma Radhakrishnan,Director and Dr. Biswanath Majumder, Principal Scientist, Mitra Biotech, conducted a scientific experiment using tumor tissues from 22 patients with head and neck cancer. They have developed a novel ex-vivo platform to identify responders to Rapamycin, an mTOR inhibitor. However, a majority of the tumor samples did not have an antitumor effect after treatment with the mTOR inhibitor, possibly because Rapamycin is known to activate the AKT pathway. "This technology will reduce the time and resources for the development of new anti-cancer drugs in future and potentially bring down the cost of medicine for cancer" says Dr. Mallik Sundaram, President and CEO of Mitra Biotech.

The study has taken place at Bangalore based Mitra Biotech, where for the last few years, researchers have been working on developing a mechanism to stratify patients according to their individual genetics and physiology, to understand the best possible therapy for a particular patient. Every year, over 16% of cancer deaths are attributed to head and neck cancer in India.

Dr. Majumder told BioSpectrum that, "This sort of validation is very rare and especially rare from an Indian lab. The American Association for Cancer Research at Philadelphia,is a leading scientific peer-reviewed journal in this field."

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Dr. Majumder and colleagues used a systems biology approach called tumor explant model to distinguish driver mutations, or those that are critical for a tumor's survival, from passenger mutations. This distinction is important for stratifying patients for current treatments and for developing novel rational combinations of anticancer agents.

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