

UGM FKKMK Doctoral Student Investigates Prognostic Markers of Lung Cancer

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Lung cancer is the foremost cause of death to men in the world and Indonesia. Notwithstanding many improvements in diagnosis and therapy in recent decades, lung cancer is still one of the most crudely prognostic cancers.

One of the causes of the high mortality rate is many patients in a high-level stage.

"When the diagnosis is confirmed, the patient is still in a local stage, the five-year survival rate reaches 54.8 percent, while if you have metastasis, only 4.2 percent of patients can survive for five years," said Achmad Mulawarman Jayusman, a student of the Doctor of Science Program in Medicine and Health, Faculty of Medicine, Public Health, and Nursing UGM.

He conveyed this statement in the online Doctoral Promotion Open Examination on Tuesday (22/9). In his dissertation, he considered whether miR-148 and miR-155 could be used as prognostic markers in non-small cell carcinoma lung cancer (KPKBSK).



"If we can recognize the patient's prognosis, hopefully, we can immediately give the right treatment. Hence, it will save the drug costs that must be guaranteed by BPJS Kesehatan," he revealed.

He also said that it is appropriate for researchers to make a more accurate, non-invasive prognostic modality as their top priority in this proteomic era.

According to him, identifying new prognostic biological markers is very important and essential for controlling lung cancer. Moreover, in the last decade, small non-coding RNA molecules called micro RNA (miRNA) have been discovered to lessen the target gene's protein expression by repressing the translation process or degrading messenger RNA (mRNA).

In his research, the types of miR-148 and miR-155 were taken using liquid biopsy to determine the prognosis of KPKBSK.

"If miR-148 and miR-155 are proven to be non-invasive biomarkers for the prognosis of KPKBSK. Hopefully, this study can become a concern for clinicians' guidance in determining the right treatment options for KPKBSK patients in Indonesia," said Achmad.

From his research, he found that KPKBSK patients with low miR-148 expression in the circulation had a worse prognosis than KPKBSK patients with high miR148 in Indonesia.

Meanwhile, KPKBSK patients with high circulating miR-155 expression had a worse prognosis than KPKBSK patients with low miR155 in Indonesia.

"Low miR-148 expression and high miR-155 expression in the circulation are correlated with poor overall survival and progression-free survival in KPKBSK," he added.

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