

News & Comments

ATP-TCA Had the Clinical Guiding Significance of Anti-Tumour Drugs in Chemotherapy

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Chemotherapy is a medical procedure that employs chemical substances to stop the growth, invasion, metastasis, and finally death of cancer cells. Even in tumours with the same histological type and degree of differentiation, the sensitivity to medicines and the effectiveness of tumour chemotherapy varies greatly. Oncologists have been facing a significant issue with it. Scientists are interested in ATP-TCA. It is a cutting-edge method for detecting medication susceptibility in vitro tumours. It is possible to reflect the effects of medications on tumour cells throughout each cycle by using the endogenous ATP level of cells as a measure of cell activity. Currently, ATP-TCA is frequently used to treat leukaemia, ovarian cancer, breast cancer, and tumours of the gastrointestinal tract. In China, most studies use it for in vitro research on non-small cell lung cancer, while it has also been reported in the United States for the treatment of NSCLC. For the benefit of colleagues, this study investigated its use in NSCLC patients in our hospital.

The experimental group and the control group are split up into 2 groups for the study. From June 2017 to May 2019, NSCLC patients with pleural effusion and ECOG physical performance status scores of 0–2 who were able to receive chemotherapy were recruited as the experimental group's specimens. Patients with advanced NSCLC should have closed thoracic drainage to collect the sterile pleural effusion (which may contain cancer cells). The cancer cells in the specimens were tested for drug sensitivity using the ATP-TCA technique, and 8 anti-tumour medicines that are often used in NSCLC treatment were used in the test. After patients were released from the hospital, they were checked on once a month. The count data were compared and examined using Graph Pad statistical software.

Statistics were used to examine the patients' demographic traits in the 2 groups. It was discovered that the two patient groups consisted primarily of senior citizens. Additionally, most of them had adenocarcinoma. In the experimental group, there were 29 cancer patients, while in the control group, there were 61 adenocarcinoma patients. As a result, there was no discernible difference in any group's age distribution, gender distribution, or percentage of different cancer types. Statistical analysis was done on the pleural effusion and anti-tumour medication use in NSCLC patients. According to the ATP-TCA technology's basic tenet, luciferase and luciferin can unite to accelerate the conversion of ATP into AMP and the release of fluorescence in aerobic conditions. Currently, ATP-TCA technology is being utilized to forecast how responsive malignancies will be to anti-tumour medications.

Most patient treatment regimens, however, were of combination drugs, therefore the treatment



programs that researchers looked at were more persuasive than studies of individual prescriptions. This study used multiple logistic regression analysis, which was more thorough than the results of the most recent research. The outcomes of ATP-TCA can contradict conventional chemotherapy ideas and offer extremely strong reference evidence for the clinic. According to the results of the drug susceptibility tests, ATP-TCA is very important for the customized treatment of NSCLC.

Since there was little correlation between the rate of anti-tumour drug use in the control group and the rate of tumour cell sensitivity in the experimental group, it was clear that doctors chose their medications at random. A preliminary demonstration of the clinical importance of ATP-TCA for selecting anti-tumour medications in chemotherapy regimens for NSCLC patients with concomitant pleural effusion was made.

JOURNAL REFERENCE

Song, J., J. Peng, X. Liu, D. Zhou, C. Yang and J. Luan, 2022. Diagnosis and treatment of non-small cell lung cancer: Adenosine triphosphate tumor chemosensitivity assay. *Int. J. Pharmacol.*, 18: 842-849.

KEYWORDS

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