

## عنوان مقاله:

NMR-based plasma metabolic profiling in patients with unstable angina

## محل انتشار:

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## خلاصه مقاله:

**Objective(s):** Unstable angina (UA) is a form of the acute coronary syndrome (ACS) that affects more than a third of the population before age 70. Due to the limitations of diagnostic tests, appropriate identification of UA is difficult. In this study, we proceeded to investigate metabolite profiling in UA patients compared with controls to determine potential candidate biomarkers. **Materials and Methods:** Ninety-four plasma samples from UA and 32 samples from controls were analyzed based on <sup>1</sup>H NMR spectroscopy. The raw data were processed, analyzed, and subjected to partial least squares-discrimination analysis (PLS-DA), a supervised classification method with a good separation of control and UA patients was observed. The most important variables (VIP)  $\geq 1$  were selected and submitted to MetaboAnalyst pathway enrichment to identify the most important ones. **Results:** We identified 17 disturbed metabolites in UA patients in comparison with the controls. These metabolites are involved in various biochemical pathways such as steroid hormone biosynthesis, aminoacyl-tRNA biosynthesis, and lysine degradation. Some of the metabolites were deoxycorticosterone, 17-hydroxyprogesterone, androstenedione, androstanedione, etiocholanolone, estradiol, 2-hydroxyestradiol, 2-hydroxyestrone, 2-methoxyestradiol, and 2-methoxyestrone. In order to determine test applicability in diagnosing UA, a diagnostic model was further created using the receiver operator characteristic (ROC) curve. The areas under the curve (AUC), sensitivity, specificity, and precision were 0.87, 90%, 65%, and 91%, respectively, for diagnosing of UA. **Conclusion:** These metabolites could not only be useful for the diagnosis of UA patients but also provide more information for further deciphering of the biological processes of UA.

## کلمات کلیدی:

Biomarker, Metabolites, Metabolomics, NMR spectroscopy, Unstable angina

## لینک ثابت مقاله در پایگاه سیویلیکا:

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