**P14**

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**Understanding pathogenesis of colorectal cancer using tissue metabolomics: A systematic review**

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**ABSTRACT**

Colorectal cancer (CRC) is one of the leading causes of cancer death worldwide. Early diagnosis and accurate staging of the disease is vital to improve prognosis. Metabolomics has been used to identify changes in metabolite profiles in the different stages of the cancer in order to introduce new non-invasive molecular based tools for staging.In this systematic review, we aim to identify common reported metabolite changes in human tissue samples and the dominant metabolic pathways associated with CRC progression. Broad systematic search was carried out from selected databases. Four reviewers screened and reviewed the titles, abstracts, and full text articles according to the inclusion and exclusion criteria. Quality assessment was conducted on the three articles which met the criteria. Data showed that the metabolites involved with redox status, energy metabolism, intermediates of amino acids, choline and nucleotides metabolism were the most affected during CRC progression. However, there were differences in levels of individual metabolites detected between the studies and this might be due to study population, sample preparation, analytical platforms used and statistical tools. This systematic review highlights the metabolites changes from early to late stages of CRC and the need to conduct similar studies in different populations.