Association between bioelectrical impedance analysis and platelet-to-lymphocyte ratio in colorectal cancer

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Article: Association between body composition measured by bioelectrical impedance analysis and platelet-to-lymphocyte ratio in colorectal cancer (Song WJ, et al. *Korean J Clin Oncol* 2019;15:7-14)

It has been well established that loss of fat and skeletal muscle were associated with toxicity after cancer treatment and survival [1,2]. Colorectal cancer patients often experience symptoms such as anorexia, nausea, diarrhea, and obstipation at the time of diagnosis. This may negatively affect body composition as well as influence water and electrolyte balance. Therefore, easy available tools that can be used in the clinic to evaluate and monitor loss of fat and skeletal muscle are necessary. Bioelectrical impedance analysis (BIA) is cheap, noninvasive, and provides rapid results of body composition analysis. It may be a useful tool in the clinic to identify malnourished patients. BIA estimates body composition indirectly. A low-voltage current is passed through the body, whereby impedance (i.e., tissue resistance and reactance) is measured. Impedance data is then utilized in empiric equations to estimate body composition. However, BIA has limited validity in the real practice since it does not take into account the differences in impedance represented by the various body segments [3].

Many studies have reported that systemic inflammation was associated with tumorigenesis and tumor progression via promotion of tumor proliferation, angiogenesis, and migration [4,5]. Based on this theory, several biomarkers of systemic inflammation can be

candidates for prognosis of colorectal cancer. Platelet-to-lymphocyte ratio (PLR) is the one of systemic inflammatory biomarkers. This is easily obtained from preoperative routine examination and calculated as peripheral platelet count divided by lymphocyte count, which reflects the host immune response and tumor burden. Recent two meta-analyses demonstrated that elevated PLR was associated with poor prognosis in colorectal cancer patients [6,7]. However, the prognostic value of PLR was not well evaluated in patients with colorectal cancer undergoing curative resection.

In this issue of *Korean J Clin Oncol*, Song et al. [8] demonstrated that elevated PLR was associated with all indexes related to low fat and some indexes (arm muscle circumference and measured muscle circumference of abdomen) to related to low muscle. However, this association was not found in the female patients in the current study. It is interesting to note that the correlation between the body composition and biomarker of systemic inflammation although prognostic implication was not analyzed. These results might provide the clue of prognostic value of PLR in patients with colorectal cancer undergoing curative resection. Further evaluation is necessary to understand correlation between systemic inflammation and body composition.

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CONFLICT OF INTEREST

No potential conflict of interest relevant to this article was reported.

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