Poster

2025年9月27日(土) 10:00 ~ 11:00 Poster Session (Foyer 1)

Poster 17

[P-17-06] Contemporaneous changes in cytokines and cognitive function during chemotherapy in patients with breast cancer- a prospective follow up study

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キーワード：Cancer、、chemotherapy、、contemporaneous changes、Cognitive function

Background: This study investigated fluctuations in levels of chosen cytokines among patients with breast cancer before to after chemotherapy. Contemporaneous changes in cognitive function were examined. **Methods:** Adult patients with breast cancer stages I to III without brain metastasis were invited to participate in this longitudinal follow up study. A multidimensional neuropsychological examination was administered at two timepoints evaluating multiple subjective and objective cognitive domains, depression, anxiety, or fatigue before and at least 3 months after chemotherapy, and baseline demographic information. Cytokine levels were taken at the same times. Stepwise multivariate Generalized Linear Mixed Model was used to examine changes in cytokines and associations with changes in cognitive function. **Results:** Over a mean interval of 10.46 months, Event-based prospective memory ($p<0.001$), Word list immediate ($p<0.001$) or delayed recall ($p=0.024$), and self-perceived cognitive impairment ($p=0.026$) were significantly improved following chemotherapy. Higher levels of IFNγ and worse performance on the Color Trails Test Part 1, inverse associations of IFNγ or IL-12p70 with Block Design, and TNFα with Digit Symbol Substitution were found, but no significant time effects were noted. However, significant group and time effects were only observed in IL-2 and IL-12p70 with improvements in Event-based prospective memory. That is, from baseline to follow up, each increase in log values of IL-12p70 and IL-2 were associated with 2.18 (SE=0.65, $p=0.001$) and 2.16 (0.68, $p=0.002$) points of increase in Event-based prospective memory. No significant effects were detected for other cytokines or cognitive tests.**Conclusion:** Improvements in Event-based prospective memory were positively associated with contemporaneous changes in IL-2 and IL-12p70. Our finding may not only reduce BC patients' concerns about chemotherapy-related cognitive adverse effects, but also demonstrates the possible needs for further replications and investigations on interactions of systemic cytokines, inflammation, and cognitive functions associated with cancer and chemotherapy.