Redefining Risk in Elderly AML: A Geriatric Assessment-Based Approach

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Acute myeloid leukemia (AML) predominantly affects older adults, and patients aged 60 years and older experience significantly worse survival outcomes compared with younger counterparts. This disparity is driven by distinct disease biology, including a higher prevalence of adverse cytogenetic features, along with age-related declines in performance status and the accumulation of comorbidities. Although selected older patients may benefit from intensive chemotherapy, treatment-related toxicity remains a major concern. For patients deemed unfit for intensive therapy, combination treatment with hypomethylating agents and venetoclax has emerged as the current standard of care.

Several prognostic models have been developed to identify older AML patients at high risk of early mortality, treatment resistance, or poor survival following intensive chemotherapy. However, these models are limited by modest predictive accuracy and often fail to reflect improvements in supportive care over time. In clinical practice, chronological age, performance status, and comorbidity burden are commonly used to assess fitness for intensive treatment. While easily accessible, these parameters inadequately capture the substantial heterogeneity and vulnerability of older adults with AML.

Geriatric assessment (GA), a multidimensional evaluation encompassing functional status, physical health, cognition, psychological well-being, nutritional status, and social support, offers a more comprehensive framework to assess frailty and treatment fitness. Growing evidence suggests that GA can uncover previously unrecognized vulnerabilities and improve prediction of treatment tolerance and survival in older patients with hematologic malignancies. Nevertheless, its clinical application in AML is challenged by limited standardization and lack of consensus regarding its prognostic value.

In this lecture, I will review recent advances in the use of GA to refine fitness assessment across different treatment intensities in older adults with AML. Establishing validated, GA-based fitness criteria has the potential to improve treatment selection, optimize supportive care strategies, inform fitness-adapted clinical trials, enhance interpretation of trial outcomes, and ultimately support regulatory decision-making and drug labeling.