Clinicopathological Characteristics and Survival Outcomes of Adolescent and Young Adult-Onset Sporadic Microsatellite Stable Colorectal Cancer in Thai Population

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**Background:** The incidence of colorectal cancer (CRC) is increasing in adults aged younger than 50 years. This study evaluated the clinicopathological characteristics and survival outcomes of adolescent and young adult (AYA)-onset sporadic CRC and outcome in Thai population.

**Methods:** Medical records of patients who were diagnosed with primary colon or rectal adenocarcinoma at Siriraj Hospital during 2007 to 2018 were retrospectively reviewed. Patients were classified into either the AYA-onset CRC group (age 15-39 years) or the adult-onset CRC group (age >50 years). Associations between sporadic microsatellite stable (MSS) AYA-/adult-onset CRC and clinicopathological features and survival outcomes were evaluated.

**Results:** A total 202 patients were diagnosed with AYA-onset CRC with no known history of familial CRC syndromes. Of those, 116 had data on mismatch repair status, and 94 were confirmed MSS CRC. AYA-onset CRC patients had more left-sided than right-sided tumors (77.7% vs. 21.8%), and more late-stage than early-stage disease (72.7% in stage III-IV vs. 24.7% in stage I-II). Compared to adult-onset disease, AYA-onset MSS CRC had a higher proportion of female gender (p=0.042), signet ring cell/mucinous histology (p=0.039), and perineural invasion (p=0.004). Male gender and mucinous/signet ring cell histology were significantly associated with worse overall survival (OS) in both univariate and multivariate analysis. There were no differences between groups for overall or disease-free survival.

**Conclusions:** Sporadic MSS AYA-onset CRC in Thai patients was associated with female gender and aggressive pathological characteristics. No difference in survival outcome was observed between the AYA-onset and adult-onset groups.

**Keywords:** Colorectal cancer, adolescent and young adult onset, sporadic, microsatellite stable, clinical characteristic, outcome