Long noncoding RNA UCA1 in gastrointestinal cancers: Molecular regulatory roles and patterns, mechanisms, and interactions

ABSTRACT

The rising trend of gastrointestinal (GI) cancer has become a global burden due to its aggressive nature and poor prognosis. Long noncoding RNAs (lncRNAs) have recently been reported to be overexpressed in different GI cancers and may contribute to cancer progression and chemoresistance. ,ey are featured with more than 200 nucleotides, commonly polyadenylated, and lacking an open reading frame. LncRNAs, particularly urothelial carcinoma-associated 1 (UCA1), are oncogenes involved in regulating cancer progression, such as cell proliferation, invasion, migration, and chemoresistance, particularly in GI cancer. ,is review was aimed to present an updated focus on the molecular regulatory roles and patterns of lncRNA UCA1 in progression and chemoresistance of different GI cancers, as well as deciphering the underlying mechanisms and its interactions with key molecules involved, together with a brief presentation on its diagnostic and prognostic values. ,e regulatory roles of lncRNA UCA1 are implicated in esophageal cancer, gastric cancer, pancreatic cancer, hepatobiliary cancer, and colorectal cancer, where they shared similar molecular mechanisms in regulating cancer phenotypes and chemoresistance. Comparatively, gastric cancer is the most intensively studied type in GI cancer. LncRNA UCA1 is implicated in biological roles of different GI cancers via interactions with various molecules, particularly microRNAs, and signaling pathways. In conclusion, lncRNA UCA1 is a potential molecular target for GI cancer, which may lead to the development of a novel chemotherapeutic agent. Hence, it also acts as a potential diagnostic and prognostic marker for GI cancer patients.