The improvement of sequencing technology and the detection capability of various testing devices have accelerated the research on H. pylori. From the discovery of H. pylori to the present, the basic situation of H. pylori has been well studied, including the structure and morphology of H. pylori, culture conditions, the distribution of different populations, the evolution of different populations and the types of diseases caused by H. pylori. In addition, the more in-depth studies of H. pylori have been well developed, including survival mechanisms, colonization mechanisms, pathogenic mechanisms, drug resistance mechanisms and immune evasion mechanisms. These studies have deepened our understanding of H. pylori. However, there is still a need for more studies of H. pylori to aid in the development of H. pylori vaccines and drugs.