CYFRA21-1 levels could be a biomarker for bladder cancer: a meta-analysis

L.I. Kuang¹, W.J. Song², H.M. Qing¹, S. Yan¹ and F.L. Song¹

¹Department of Pathology, General Hospital of Shenyang Military Area Command of Chinese PLA, Shenyang, Liaoning, China
²Department of Urological Surgery, Red Cross Hospital of Shenyang, Liaoning, China

Corresponding author: F.L. Song
E-mail: mac_kl@126.com

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ABSTRACT. The proteolytic region of cytokeratin-19, referred to as CYFRA21-1, is a soluble molecule present in the serum and other body fluids, and is considered a tumor marker in several neoplastic diseases. To examine whether urinary or serum samples containing CYFRA21-1 can be used as biomarkers for bladder cancer, we conducted a comprehensive meta-analysis of 3 case-control studies. In all studies considered, patients with bladder cancer had a higher CYFRA21-1 level than healthy subjects. Subgroup analysis showed that patients with metastatic bladder cancer had a higher CYFRA21-1 level than those with locally invasive disease. However, no significant difference in CYFRA21-1 was observed between patients with stage I and stage II bladder cancer; there was also no difference in patients with stage II local bladder cancer and those with stage III local bladder cancer. Based on our results, CYFRA21-1 level may be a diagnostic biomarker for diagnosing bladder cancer as well as a possible biomarker for differentiation between local and metastatic bladder cancer. However, it cannot be used as a urinary or serum biomarker for differentiating
histological stages of local bladder cancer for histological grades I-III.

**Key words:** Bladder cancer; CYFRA21-1; Meta-analysis