

Chapter 4

CLINICAL USE OF TUMOR MARKERS

Ali Volkan ÖZDEMİR¹

INTRODUCTION

Cancer can be defined as an uncontrolled cell division that affects many tissues. Many factors, such as hereditary or acquired genetic mutations, radiation, drugs, viruses, eating habits, can trigger cancer formation. In some cancer types, genetic predisposition can be detected before molecular formation by molecular methods⁽¹⁾. During tumor formation, genes regulating cell growth and proliferation, such as BRCA and p53, are inhibited; some oncogenes, such as K-ras, are activated. In metastasis of cancer, loss of function of adhesion molecules (cadherins, carcinoembryonic antigen, etc.) and activation of angiogenesis mechanism play an important role⁽²⁾. Detection of increasing and decreasing or detectable parameters in these processes can be useful in early diagnosis of cancer and determining effective treatment methods.

TUMOR MARKERS

Tumor markers can be produced in response to the formation of cancer, as well as an increase in the body in some benign conditions. But the increase in cancer is much higher than other benign conditions⁽³⁾. Very few tumor markers used in the clinic are tissue-specific. Tumor markers can be detected in cells, tissues, and body fluids and can be protein, hormone/hormone metabolites, enzymes or antigens⁽⁴⁾.

¹ Medical Doctor (MD), Uşak Education and Research Hospital, dralivolkan@gmail.com

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