[5227] - 31
M.Sc. (Part - II)
MICROBIOLOGY
MB-701: Immunology
(2008 Pattern) (Semester - III)

Time : 3 Hours]

[Max. Marks :80

Instructions to the candidates:
1) *All questions are compulsory.*
2) *All questions carry equal marks.*
3) *Draw neat labelled - diagrams wherever necessary.*
4) *Use of logarithmic tables and scientific calculators is allowed.*
5) *Assume suitable data if necessary.*
6) *Figures to the right indicate full marks.*

Q1) Attempt any two of the following :   **[16]**

   a)   Explain the role of IL - 1 in immune activation and pyrogenesis.

   b)   With the help of suitable diagram explain the role of Super antigen in pathogenesis.

   c)   Explain the mechanisms of tolerance induction.

Q2) Attempt any two of the following :   **[16]**

   a)   Explain the Idiotype network theory and its role in immune regulation.

   b)   Explain the escape mechanisms of tumours from host defence.

   c)   Describe the characteristic features of benign and malignant tumours.

Q3) Attempt any two of the following : **[16]**

a) Explain role of Biological response modifiers in cancer therapy.

b) Explain complement deficiencies and its diagnosis.

c) Explain the animal models for AIDS.

Q4) Write short notes on any four of the following : **[16]**

a) Septic shock syndrome.

b) Tumour vaccine therapy.

c) Stem cell therapy.

d) T cell deficiencies.

e) Myasthenia Gravis.

Q5) Breast cancer is the most frequently occurring cancer in women. It is essential to identify reliable prognostic factors to guide decision making during the treatment of breast cancer in order to improve prognosis. In breast cancer, carcinoembryonic antigen (CEA) and cancer antigen 15 - 3 (CA15 - 3) are the two most widely used serum tumour markers in the clinical fields. The present study aims to investigate the prognostic value of preoperative serum CEA and CA 15 - 3 levels in breast cancer patients. Serum CEA and CA 15 - 3 in a total of 432 patients who were treated for stage I - III invasive breast cancer at the Affiliated Cancer Hospital of Zhengzhou University were investigated.

Disease - free survival (DFS) was defined to be from the time of surgery to the local regional recurrence, distant metastasis, and death before recurrence. Serum CEA and CA 15 - 3 levels were determined using an automatic electrochemistry luminescence immunoassay system. The results are as follows:
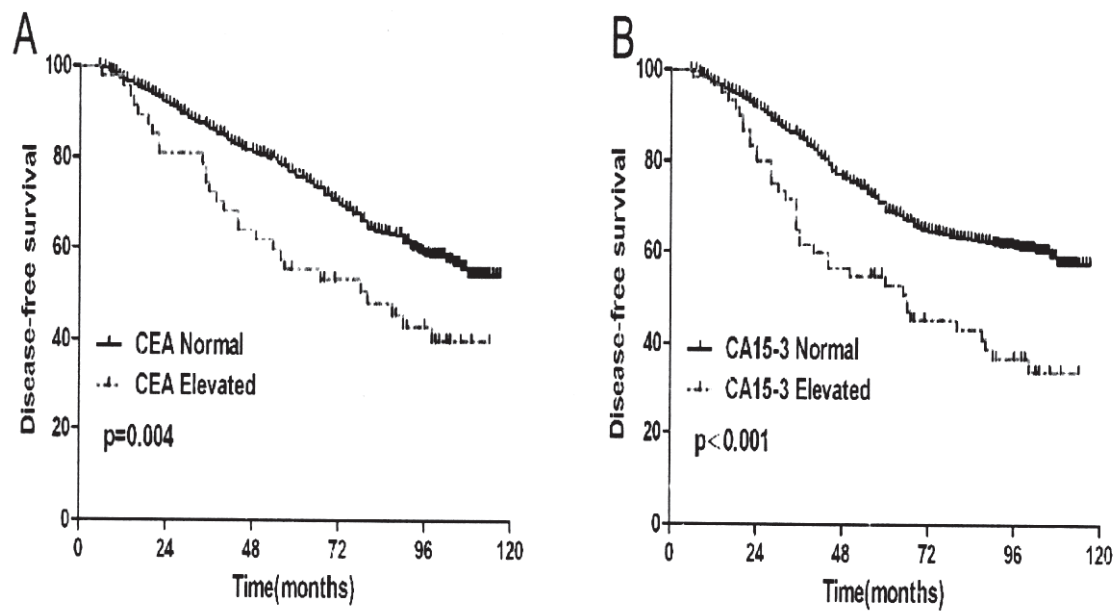
Fig 1: Kaplan - Meier survival curves of patients with normal or elevated CEA and CA15 - 3 levels. Disease-free survival (DFS) according to carcinoembryonic antigen (CEA) (A) and cancer antigen 15 - 3 (CA15 - 3) (B)

a) Explain whether Serum CEA and CA 15 - 3 concentration levels can be used as tumour markers in breast cancer. **[8]**

b) Which are the different tumour markers used in diagnosis of various tumours? **[8]**

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