Abstract: The proteomics approach was adopted to study the simultaneous expression of serum proteins in patients with nasopharyngeal carcinoma (NPC). We have subjected unfraccionated whole sera of ten newly diagnosed Malaysian Chinese patients with WHO type III NPC to two-dimensional gel electrophoresis (2-DE) and image analysis. The results obtained were then compared to that generated from sera of ten normal healthy controls of the same ethnic group and range of age. Our data demonstrated that the serum high abundance 2-DE protein profiles of NPC patients were generally similar to that of the controls, with exception of the ceruloplasmin (CPL) spots (identified by mass spectrometric analysis and MASCOT database search), which showed higher expression. The enhanced expression of CPL in the patients' sera was confirmed by competitive ELISA. Immunohistochemical analysis of nasopharyngeal lesions of NPC patients demonstrated moderate to strong positive CPL staining in the cytoplasm of cells at the regions of malignancy but only weak cytoplasmic staining at normal epithelial lining areas. When follow-up 2-DE and ELISA studies were performed on five of the NPC patients who responded positively to six months treatment, the difference in CPL expression was no longer significant. J. Med. Invest. 53: 20-28, February, 2006

Keywords: ceruloplasmin, nasopharyngeal carcinoma, serum proteomics
Serum samples.

Two-dimensional gel electrophoresis.

Silver staining.

MALDI-ToF Pro analysis.

Database search.

Image analysis.
Competitive ELISA.

Immunohistochemical studies.

Statistical analysis.
(a) pH4

(b)

(c)

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SR. Doustjafari, et al.  Ceruloplasmin expression in nasopharyngeal carcinoma