INTRODUCTION

Tumors in the adrenals originate from the adrenal cortex and medulla or as metastases from-extra adrenal primaries **(Tatic *et al.*, 2002)**. Differentiation between these three groups is the first task a pathologist to tackle when dealing with specimens from the adrenal region. The second great problem is the dignity of adrenal tumors, which cannot be determined in many adrenomedullary and some adrenocortical tumors. Immunostaining is helpful but the basic methods remain the histopathological examination of paraffin sections **(Saeger, 2000)**.

Adrenocortical cancer is a rare cancer with a very poor prognosis **(Tissier *et al.*, 2005).** Among adrenocortical neoplasmas, adenomas and carcinomas can be distinguished by evaluation of various historical parameters, including structural features and signs of invasion, according to defined algorithms **(Fogt *et al.*, 1999).**

During the past decade, many monoclonal antibodies have been developed, some of which have been assessed in adrenocortical neoplasmas using various methods. Antibodies directed against cytokeratin and vimentin can help in diagnosis **(Saeger *et al.*, 2003).**

The adrenal medullary tumors include pheochromocytoma and neuroblastoma groups. They arise from chromaffin cells and neuroblast, respectively **(Tatic *et al.*, 2002).**

With the development of immunohistochemical techniques, we have achieved a greater understanding of abnormal neural and neuroectodermal differentiation **(Achilles *et al.*, 1991).** The developments

of monoclonal antibodies have permitted the localization of single peptides and proteins that are produced by the cells of the tumor. However, it is a difficult to predict clinical outcome for patients with paraganglioma on morphologic backgrounds only. So, the use of monoclonal antibodies directed against S-100, NSE and chromogranin A can help in their localization and consequently their expression is noticed in benign and malignant lesions **(Feng *et al.*, 2005).** As regard neuroblastoma group that are derived from primitive neuroblasts. These tumors can be conceptualized as three different maturational manifestation of a common neoplasm **(Shimada *et al.*, 2004).** The expression of S-100 protein is associated with good prognosis.

Aim of the work

The present study was carried out on some of the adrenal tumors obtained from patients in Urology and Nephrology centre, Mansoura University. The morphologic distiniction of adrenal cortical and medullary tumors is still difficult. Therefore, **this study was conducted to:**

1- Threw light on the origin of the different tumors of the adrenal gland.

2- Study the clinical approachs of the patients infected by these tumors.

3- Differentiate between the different types of adrenal tumors using the histological and immunohistochemical methods.

4- Examine the diagnostic usefulness of the co expression of cytokeratin and vimentin in adrenal cortical tumors.

5- Investigate the expression of chief cell markers and sustentacular cell markers in case of adrenal medullary tumors as pheochromocytoma and ganglioneuroblastoma groups.

6- Examine the diagnostic usefulness of immunohistochemical techniques in determining the presence of differentiation and maturation in case of neuroblastoma.