# Introduction & Aim of the Work

# INTRODUCTION

The thyroid gland is capable of producing great variety of tissue patterns when it undergoes neoplastic changes *(Hazard, 1977).*

Undifferentiated (anaplastic) thyroid carcinoma of the thyroid gland represent 5 - 14% of all primary malignant neoplasms of the thyroid *(Rafla, 1969 and Franssila, 1975).*

The anaplastic carcinoma of the thyroid is a distinct group of neoplasms that differs clinically and morphologically from the differentiated one *(Hayashi and Tokuoka, 1979; Carcangiu et al.,1985a).*

The exact classification of highly malignant undifferentiated tumor is difficult in all locations including the thyroid gland because tumors have little or no morphological resemblance to their normal tissue prototype. But even these tumors may retain the ability to synthesize some specific cell products of their parent cells *(Aldinger et al., 1978; Shvero et al.,1988).*

The development of immunohistochemical technique and monoclonal specific antibodies provide a tool for identification of cytoplasmic or membranous bound tissue antigens, such as thyroglobulin specific for follicular cell of the thyroid *(Burt and Goudie, 1979; Albores Saavedra et al., 1983; De Micco et al., 1987),* calcitonin for the identification of medullary carcinoma *(Saad et al., 1984b; Sikri et al., 1985; Shvero et al., 1988),* leucocytic common

antigen for lymphoma *(Gatter et al., 1985)* and cytokeratin as an epithelial marker *(Carcangiu et al., 1985a; Spires et al., 1988).*

The histogenetic lineage of anaplastic (undifferentiated) tumors occurring in the thyroid has produced great debate in literatures *(Livolsi et al., 1987),* however immunohistochemical techniques could be useful in the diagnosis of anaplastic carcinoma of the thyroid which can not be surely classified by conventional histological methods *(Hurlimann et al., 1987; Venkatesh et al., 1990).*

Diagnostic electron microscopy (DEM) is a part of diagnostic pathology that has been taken in consideration, when a definite diagnosis can not be established by light microscopy. Also, it might be a mean to reach a specific diagnosis, especially about the histogenesis of undifferentiated tumor, composed of either epithelioid, spindle, small or pleomorphic giant cells *(Johannessen, 1977; Ghadially, 1985).*

The use of more or less sophisticated methods like electron microscopy, immunocytochemistry and flow cytometry in the study of the thyroid tumors has broadened our understanding of the pathobiology of such tumors *(Sobrinho-Simoes et al., 1985).*