

*Summary-conclusion*

## Summary

This study aims first at evaluation of AgNORs, CD34 and MMP-2 in normal and NSCLC. Second, to compare and to correlate the findings with other clinicopathological variants such as age, sex, tumor grade and stage, LNs metastases and distant metastases. Statistical analysis and correlations were made for all these variants.

This retrospective study was carried upon 40 Egyptian patients with non small cell lung cancer and ten cases of non neoplastic lung lesions that were taken as a control. The patients were admitted to Benha University Hospital, National Cancer Institute and Nasser Institute.

These cases included 15 cases of squamous cell carcinoma, 9 cases of Adenocarcinoma, and 16 cases of undifferentiated large cell carcinoma. 10 cases of non-neoplastic lung diseases (2 cases of cystic lung disease- 6 cases of emphysema adjacent to bronchiectasis and 2 cases of pneumonia adjacent to lung abscess) were taken as control. The mean age of cancer patients was 55.6 Ys. The incidence of non small cell lung carcinoma was more common in males (28 cases) than females (12 cases).

Non small cell lung carcinomas were graded into 3 cases of well differentiated tumors, 11 cases of MD tumors, 10 cases of PD tumors, and 16 cases of UDLCC. TNM staging system was applied for each tumor case. Lymph node metastases and distant metastases were evaluated for every case.

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## Summary

As regarding TNM staging system, there were 12 cases at stage I, 8 cases at stage II, 5 cases at stage III, and 15 cases at stage IV. Among the 40 cases of non small cell lung carcinoma, 10 cases had no lymph node metastases (N0), 15 cases categorized as N1, 10 cases categorized as N2, and 5 cases categorized as N3. There were 24 cases without evident distant metastasis (M0) and 16 cases with distant metastases (M1).

The mean AgNORs count for control and malignant cases was detected by counting the number of dots in nuclei of 100 cells in high power fields (x1000). For control cases, the mean AgNORs was 1.5 dots/nucleus, and for NSCLC cases, it was 7.2 dots/nucleus. The mean AgNOR count was higher in Sq.C.C cases (7.4 dots/nucleus) than in Adenocarcinoma (6.5 dots/nucleus). About distribution of dots in nuclei, they are arranged at the periphery of nucleoli in some cases, but in other cases, they are dispersed in the nucleoplasm.

Mean AgNORs count was significantly correlated with histopathological grade of non small cell lung cancer.

CD34 was detected by immunohistochemical staining technique in all control and NSCLC cases. CD34 was detected as brown membranous staining of blood vessels. The expression was hypervascular ( $\geq 30$  blood vessels) in 6 control cases, but hypovascular ( $\leq 30$  blood vessels) in the other 4 control cases.

For Sq.C.C cases, 10 cases (66.7%) were hypovascular, and the other 5 cases (33.3%) were hypervascular. Among 9 adenocarcinoma cases, 6 cases (66.7%) were hypervascular, and the other 3 cases (33.3%) were hypovascular. For UDLCC cases, 11 cases (68.7%) were hypervascular, while the other 5 cases (31.3%) were hypovascular.

## Summary

There was significant positive correlation between extent of CD34 expression and state of distant metastases and stage of non small cell lung cancer (according to TNM staging system) as among 12 cases at stage I, 2 cases were hypervascular and the other 10 cases were hypovascular. Among 8 cases at stage II, 3 cases were hypervascular, and the other 5 cases were hypovascular. Among 5 cases at stage III, 3 cases were hypervascular and 2 cases were hypovascular. Among the 15 cases at stage IV 14 cases were hypervascular and only one case was hypovascular.

MMP-2 was detected by immunohistochemical staining technique. It appeared as fine cytoplasmic granules in tumor cells. Also endothelial cells and fibroblasts were positively stained for MMP-2. In all control cases, the normal bronchial epithelial cells were negatively stained for MMP-2.

among 15 cases of Sq.C.C 4 cases showed (-ve) expression, 6 cases showed (+1) expression (less than 10% of malignant cells were positively stained), 2 cases showed (+2) expression (10-40% of malignant cells were positively stained), and the other 3 cases showed (+3) expression (more than 40% of malignant cells were positively stained). Among 9 cases of Adenocarcinoma, 2 cases showed (-ve) expression, 2 cases showed (+1) expression, 4 cases showed (+2) expression, and one case showed (+3) expression of MMP-2. Among 16 cases of UDLCC cases, 3 cases showed (-ve) expression, 3 cases showed (+1) expression, 7 cases showed (+2) expression, and 3 cases showed (+3) expression of MMP-2.

There was significant positive correlation between extent of MMP-2 expression and state of distant metastases, as among 24 cases without distant metastases 9 cases showed (-ve) expression, 11 cases showed (+1) expression, and 4 cases showed (+2) expression of MMP-2. Among 16 cases with distant metastases, 9 cases showed (+2) expression, and the other 7 cases showed (+3) expression of MMP-2.

Also, there was significant positive correlation between extent of MMP-2 and stage of non small cell lung cancer, as out of 12 cases at stage I, 6 cases showed (-ve) expression, 4 cases showed (+1) expression, and the other 2 cases showed (+2) expression of MMP-2. Among 8 cases at stage II, 6 cases showed (+1) expression, and the other 2 cases showed (+2) expression of MMP-2. Among 5 cases at stage III, 3 cases showed (-ve) expression, one case showed (+1) expression, and the last case showed (+2) expression of MMP-2. Among 15 cases at stage IV, 8 cases showed (+2) expression, and the other 7 cases showed (+3) expression of MMP-2.

There was significant positive correlation between extent of CD34 expression and extent of MMP-2 expression, as among 22 hypervascular cases, 3 cases showed (+1) expression, 12 cases showed (+2) expression and the other 7 cases showed (+3) expression of MMP-2, however among 18 hypovascular cases, 9 cases showed (-ve) expression, 8 cases showed (+1) expression and one case showed (+2) expression of MMP-2.