Bronchopulmonary cancer worldwide is a matter of public health being alarmingly increasing for the last 50-60 years. Bronchoscopy is an essential method of positive diagnosis both in peripheral bronchopulmonary cancer and in the central one. This investigation allows pre-surgical staging of lung cancer by determining the endobronchial extension. We analysed a batch of 780 patients examined from bronchoscopic and histopathological point of view at Tudor Vladimirescu Pneumonhptisology Hospital, from Runcu commune, Gorj County between 2005 and 2011 and at Tg-Cărbuneşti Emergency City Hospital from October 2011 until October 2012. Bronchoscopy with its endoscopic sampling methods (bronchial microlavage, broncho-alveolar lavage, multiple bronchial biopsies) allowed positive diagnosis, as well as histopathological diagnosis and pre-surgical staging. Lung cancer indicated the following histological types: squamous carcinoma (58,3%), adenocarcinoma (18,2%), small cells carcinoma (14,1%), big cells carcinoma (9,4%). Squamous carcinoma was more frequent in men, and adenocarcinoma was more frequent in women. This is in accordance with the specialized literature.(1,2,3,5,6,7) 

From histopathological point of view, lung cancer tends to be grouped in 2 special types: non-small cell carcinoma (squamous cell carcinoma, adenocarcinoma and big cell carcinoma) and small cell carcinoma; this differentiation is necessary for therapy and diagnostic.(10)

The purpose of the study was to identify the various histopathological forms of lung cancer in the patients hospitalized at Tudor Vladimirescu Pneumonhptisology Hospital and Tg-Cărbuneşti Emergency City Hospital through the bronchoscopic examination performed with a Karl Storz bronchoscope, and histopathological examination was performed in the pathologic anatomy laboratory of Tg-Cărbuneşti Hospital with an Olympus CX21 Microscope and a processing camera.

The analysis of the frequency of various histopathological types of lung cancer concerned the frequency bronchial aspiration and all the products necessary for the histological diagnosis.(10)
of the squamous carcinoma, small cell adenocarcinoma and big cell carcinoma.

**METHODS**

We analysed a number of 780 patients hospitalized at Tg-Cărbuneşti Emergency City Hospital between 2005-2012 diagnosed with bronchopulmonary carcinoma which were applied the bronchoscopy manoeuvre.

The biologic material sampled through bronchial biopsy, bronchial aspiration and bronchial lavage was sent to the Pathologic Anatomy Service within Tg-Cărbuneşti Emergency City Hospital for processing and cyto and histopathological examination. The cytopathological examination consisted in Haematoxylin-Eosin colouring of fixed smears (alcohol, fixing spray), and the histopathological examination was performed through the classic histopathological technique of paraffin inclusion, in order to perform optical microscopy studies.

**RESULTS**

In the patients of the batch, fibrobronchoscopy allowed:
- Directly viewing the endobronchial alterations in the bronchopulmonary carcinoma (tumour formations, extrinsic formations, mucous membrane infiltrations) in all patients;
- Achieving histopathological material through positive bronchial biopsy in 74.87% of the patients;
- Achieving cytological material through:
  - positive bronchial aspiration result in 71.6% of the patients with bronchopulmonary cancer
  - positive bronchial microlavage in 88.8% of the patients
  - positive bronchial brushing in 66.28% of the patients.

The histopathological confirmation percentage of BPC using bronchoscopy can be compared with the one in literature (11), increasing up to maximum 88.8% using cytological sampling methods (figure no. 1).

![Figure no. 1. The positivity percentage of various methods of collecting cytological and histopathological material](image)

As a result of the histopathological exam, we got the following types of anatomo-pathological types:
- 1\textsuperscript{st} place: 455 cases of squamous carcinoma representing 58.3%;
- 2\textsuperscript{nd} place: 142 cases of adenocarcinoma representing 18.2%;
- 3\textsuperscript{rd} place: 110 cases of small cell carcinoma representing 14.1%;
- 4\textsuperscript{th} place: 73 cases of big cell carcinoma representing 9.4%.

Macroscopic, the squamous carcinoma appearance (figure no. 2 - left) Microscopy (Sediment to paraffin, Col. HE) revealed an atypical, poorly differentiated squamous-cellular population (nuclei increased with anisocytosis and pleomorphism, prominent nucleoli) (figure no. 2 - right).

**Figure no. 2. Squamous carcinoma - macroscopic and microscopic examination**

Endoscopic, the adenocarcinoma appearance (figure no. 3) was predominantly an extrinsic compression in varying degrees (figure no. 3 – left, in approximately 90%) with mucosa infiltration and spontaneous bleeding. In figure no. 3 – right is represented a microscopic appearance of adenocarcinoma with an atypical epithelial population, nuclei increased, variation of form and sizes, atypical mitoses and cytoplasmic vacuolation suggestive for glandular origin (smear – col. Panoptic).

**Figure no. 3. Adenocarcinoma - macroscopic and microscopic examination**

Macroscopic, small cell carcinoma appearance was predominantly a diffuse infiltration of the mucosa associated with tumor formation in different sizes, covered or not covered by whitish areas of necrosis (figure no. 4 – left). Microscopic appearance was an atypical small cellular population with hyperchrome, pleomorphic nuclei; “moulding” aspect, (figure no. 4 – right – col. Panoptic).

**Figure no. 4. Small cell carcinoma – macroscopic and microscopic examination**

Big cell carcinoma appearance was most commonly an endoscopic extrinsic compression. In figure no. 5 – left is shown an extrinsic compression of the posterior wall of the distal trachea and the tracheal Carina, which obstructs 1/3 of the lumen primitive right and almost completely primitive left, with tumor infiltration of the mucosa.

Microscopic, (figure no. 5 - right - col. Hematoxylin - Eosin) were present big atypical epithelial cells with variable
nuclei in form and sizes, frequently multiple, revealing prominent nucleoli.

**Figure no. 5. Big cell carcinoma – macroscopic and microscopic examination**

**DISCUSSIONS**

Histopathological types obtained relative to international statistics (12,13) were: the squamous carcinoma had an increased frequency compared to WHO statistics (35-50%), and to Romania (45%). The adenocarcinoma frequency was at the lower limit compared to WHO statistics (15-35%) and low compared to Romanian statistics (25%). The small cell carcinoma had a low incidence frequency compared to WHO statistics (20-25%) and to the Romanian statistics (20%).

On the other hand, big cell carcinoma had a lower frequency compared to WHO statistics (10-15%) and to Romanian statistics (10%) (figure no. 6).

**Figure no. 6. The percentage of various pathologoanatomic types of BPC as compared to WHO statistics and to Romanian statistics.**

The squamous carcinoma was more frequent in men, 364 men being diagnosed with this type of pulmonary cancer, which means 80% of the studied patients.

The adenocarcinoma was more frequent in women, 94 patients being diagnosed with this histopathological type of BPC, which is 66,2% of the studied patients. The small cell carcinoma was diagnosed in 110 patients, being more frequent in men (81,8%) compared to women. Big cell carcinoma was diagnosed in 73 patients, being more frequent in men (68,4%) than in women.

**CONCLUSIONS**

Bronchoscopy with the endobronchial sampling methods (bronchial microlavage, broncho-alveolar lavage, multiple bronchial biopsies) allowed the positive diagnosis of 88,8%, including histological diagnosis and pre-surgical staging.

Bronchoscopy is a simple, repetitive method, which does not imply major side effects.

The histopathological types occurred were: squamous carcinoma (58,3%), adenocarcinoma (18,2%), small cell carcinoma (14,1%) and big cell carcinoma (9,4%).

**REFERENCES**