

PROGRESS IN THE TREATMENT OF LUNG CANCER

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CONTENT

- Epidemiology
- Situation in the Czech Republic
- Classification of lung cancer
- Progress in the diagnosis of NSCLC
- Progress in the treatment of SCLC
- Palliative management – what is new?
- Future development

EPIDEMIOLOGY

- The publication from 1912 counting all cases of lung cancer over the world found 374 cases x in 2020 WHO described 2 206 771 new cases over the world
- It is the second most common malignancy and the first cause of death among all oncological diseases in the world (GLOBOCAN)
- In the Czech Republic 6 459 new cases were detected in 2018 (ÚZIS)



SITUATION IN THE CZECH REPUBLIC (ÚZIS 2018)

- 50% of patients are 63-75 years old
- Male:Female = 1,9:1
- The lowest incidence – South Moravian region, the highest – North-west of Czech
- 70% of cases are diagnosed in stage III a IV, 5-years survival is 17,8% x breast cancer 89,2%



CLASSIFICATION OF LUNG CANCER

- **According to the histology:**

- **Adenocarcinoma**
- **Squamous carcinoma**
- NSCLC NOS
- Large cell carcinoma
- Adenosquamous carcinoma
- Sarcomatoid carcinoma
- Mucoepidermoid carcinoma
- **Neuroendocrine tumors**

CLASSIFICATION OF LUNG CANCER

- **According to the biological features:**

- **NSCLC** – 85% of cases, slower growth, less sensitive to CHT and RT, lower risk of creating metastasis, TNM classification, molecular-genetic markers, more often in peripheral areas
- **SCLC** – 15% of cases, quick growth and huge tendency to metastasis, sensitivity to CHT and RT, limited/extensive disease, central localisation

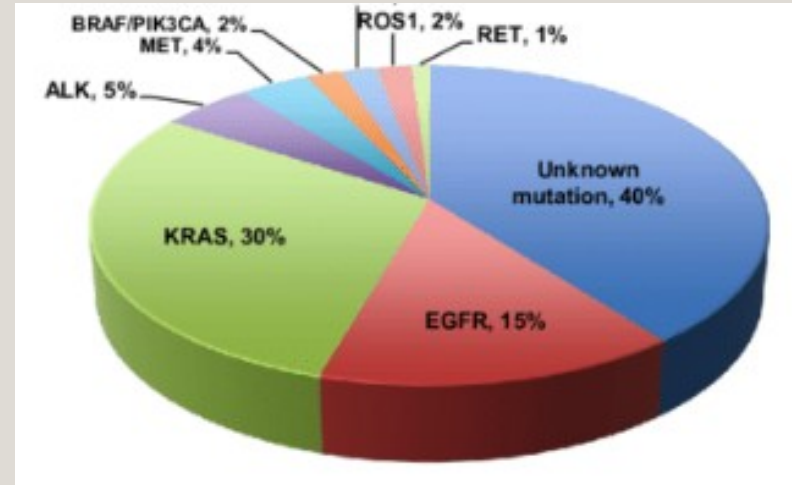
CLASSIFICATION OF LUNG CANCER

- **According to the clinical stage:**
 - **I-II B** – tumor max 5cm, max unilateral hilar lymph nodes
 - **III A, B, C** – any size of tumor with/without lymph nodes (hilar, mediastinal, supraclavicular)
 - **IV** – any size of tumor, solitar or multiple intra or extrathoracic metastasis, pericardial and pleural effusion, carcinomatoid lymphangitis

CLASSIFICATION OF LUNG CANCER

- **According to the molecular-genetic changes:**

+ PD-L1 expression
(0-100%)

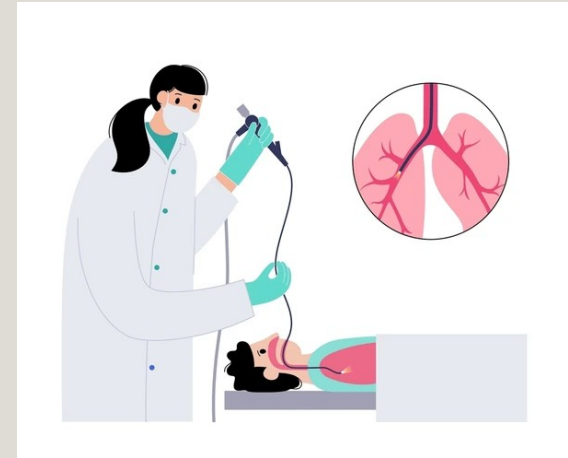


PROGRESS IN PREVENTION

- **Screening of lung cancer** – project MZČR – since January 2022
- Inclusion criteria: smoking history, 20 pack-years, age 55-74 years
- Indication of LD-CT scan
- Radiological evaluation (positive/negative/nonspecific finding), it leads to a control CT scan or examination at the pneumooncology

PROGRESS IN THE DIAGNOSIS

- An urgent need of a sufficient tissue sample for histology and molecular diagnosis
- Bronchology – endobronchial cryobiopsy, EBUS, rEBUS
- Transthoracal biopsy (CT, UZ), mini-invasive VATS, lobectomy is still a golden standard

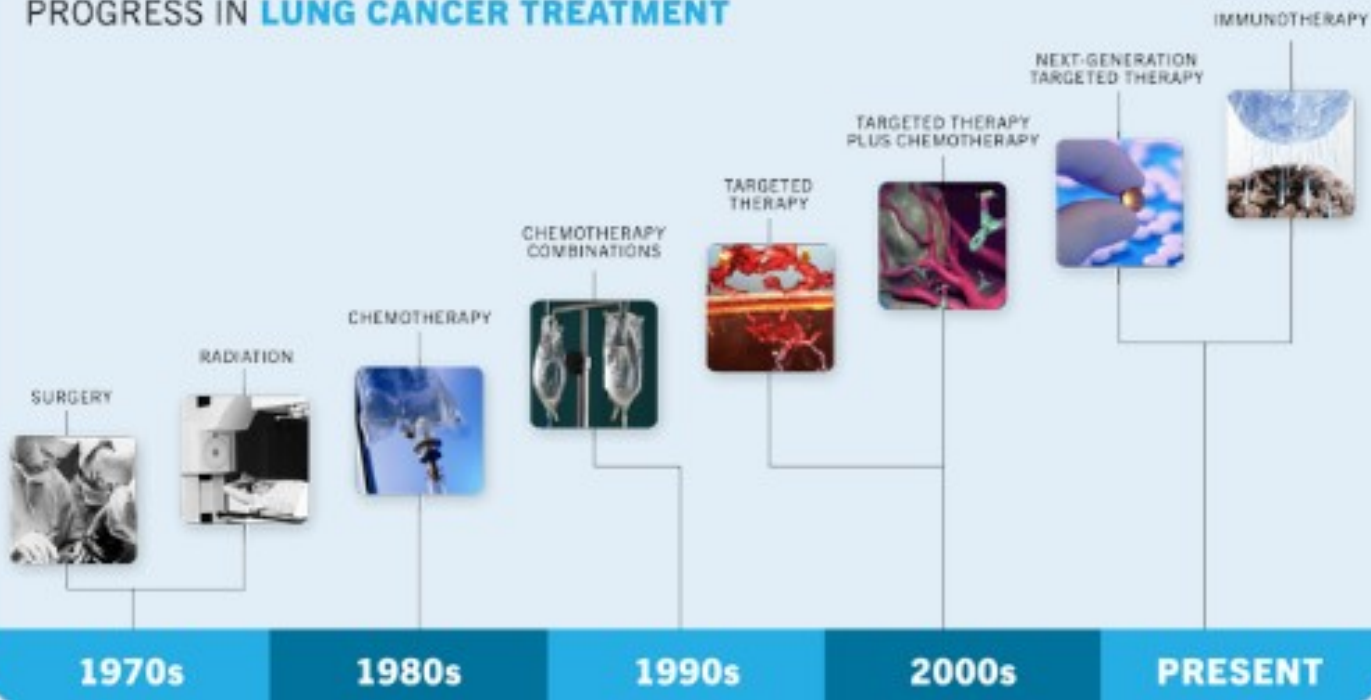


PROGRESS IN THE TREATMENT OF NSCLC

- A focus on the first line therapy with the highest efficacy
- In NSCLC wild-type immunotherapy and its combinations is preferred (neoadjuvant, adjuvant, stage III/IV)
- Phenomena of **personalised treatment**, Next Generation Sequencing
- Radiotherapy and its special modifications (Proton therapy, Cyber knife)



PROGRESS IN LUNG CANCER TREATMENT



Standard chemotherapy
(platin based chemotherapy)

TKI's (x EGFR mutation)
- gefitinib, erlotinib, afatinib, osimertinib, amivantamab

ALK inhibitors
- crizotinib, alectinib, ceritinib, brigatinib, lorlatinib

ROS inhibitors
- crizotinib, entrectinib

NTRK inhibitors
- entrectinib

VEGFR inhibitors
- bevacizumab

Imunotherapy
- pembrolizumab, nivolumab, atezolizumab, durvalumab, cemiplimab

Chemo/immunotherapy
- pembrolizumab + CHT, nivolumab+ipilimumab+ CHT

Other inhibitors
(sotorasib – KRAS, pralsetinib - RET, dabrafenib - BRAF, tepotinib - MET)

PROGRESS IN THE TREATMENT OF SCLC

- Standard chemotherapy is still crucial
- The new approach - combination with immunotherapy (durvalumab) for LD/ED stage
- No genetic markers, still with bad prognosis

PALIATIVE TREATMENT – WHAT IS NEW?

- Improved management of malignant pleural effusion (pleuroscopy, tunelized pleural catheter)
- Insuficient venous systém (iv port, PICC, CICC catheters)
- The treatment of bone metastasis (denosumab)
- Wider background of mobile hospices and hospice departments



FUTURE DEVELOPMENT

- Centralisation of the oncological care
- Shortening of the time to diagnosis
- Pneumooncosurgical centers
- „ NGS for everyone“
- New agents and approach



Thank you for your attention

