



Pulmonary Nodules, Experimental and Clinical Studies

Da-Yong Lu^{1*}, Jin-Yu Che¹ and Hong-Ying Wu²

¹School of Life Sciences, Shanghai University, PR China

²College of Science, Shanghai University, PR China

Abstract

Computerized tomography (CT) technique popularity in China led to a new phenomenon—pulmonary nodules in a lot of adults. Effective therapeutics may base on new diagnostic techniques, surgery and drug study. As a new challenge, the diagnostic and therapeutic relations are bridge to narrow to mistake margins and patient incurability. This Article addresses the rollout of new diagnostic-therapeutic techniques and availability for this pattern of pulmonary disease in wide-ranges.

Keywords: Pulmonary Nodules; Drug Treatment; Antibacterial; Disease Diagnosis; Surgery

History

Computerized tomography (CT) technique popularity in China led to a new phenomenon—pulmonary nodules in a lot of adults [1-2]. Effective therapeutics may base on new diagnostic techniques, surgery and drug study. As a new challenge, the diagnostic and therapeutic relations are bridge to narrow to mistake margins and patient incurability. This Article addresses the rollout of new diagnostic-therapeutic techniques and availability for this pattern of pulmonary disease.

Methods

Despite this new discovery and clinical urgency, no well-formed therapeutics can be based from existing knowledge. Since many patients are asymptomatic, cautions should be aimed to reduce hollow and mistakes for clinical treatment studies and economic burden to developing countries, like China and India.

Many diagnostic and therapeutic options are proposed. The potential threat and uncertainty for therapeutics are debated. The characteristics of pulmonary nodules and different pathogenesis in image and biomarkers welcome and invite new therapeutic paradigms. Knowledge exchanges and technical breakthroughs (advanced diagnosis and personalized medicine) should be reevaluated and updated [1].

Pathology

As a first impression, lung cancer or metastasis are attributed. Surgical indication and procedure optimization should be studied [3]. Therapeutic broadening and improvements should be considered:

- Nodule images specifications.
- Big data analysis and streamlines.
- Cancer growth or metastasis therapeutic studies [3].
- Drug development, evaluative architecture or clinical validating [4-5].
- Traditional medicine, like herbal medicine or acupuncture [6-9].
- Lung infection, vascular clotting and cardiovascular diseases are associated [10].
- Different surgery attempting [2-3].
- Immune system dysfunction or loss [11-12].
- Personalized medicine [13-16].
- Clinical treatment studies [17-19].
- Promotion of immunotherapy [20].



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Author : Dr. Da-Yong Lu, Ph.D.

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*Correspondence:

Dr. Da-Yong Lu, Ph.D., Associate Professor, School of Life Sciences, Shanghai University, PR China, E-mail: ludayong@sh163.net

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Table 1: Diagnostic and therapeutic relation for pulmonary nodules.

Pathogenesis	Therapeutics & drug selection
Pulmonary tuberculosis	Antibacterial or other drug combination
Viral infections	Antiviral, herbal therapies & phytochemicals
Lung cancer or metastasis	Drug in murine tumor models (Lewis lung carcinoma or B16)
Long disease observation	Review, cross-section, medical, & disease eradication
Immune dysfunction	Food, sports or medications

- Artificial intelligence supports [21-25].

Results

At present understanding and knowledge, pulmonary nodules are not malignant diseases in 100% rates. Respiratory system infection, blood coagulation, and many underlying diseases (cardiovascular and overweight) might be disease origin or complication. These kinds of therapeutic or surgery preparedness should be investigated.

Discussion

Optimizing therapeutics is a key issue for pulmonary nodule managements. It should not be too complicated or over-simply. More pathophysiological, modern diagnosis and therapeutic studied is the first priority and renewed. Main avenues are;

- Quickly differentiating if it is a normal tissues or malignancy. Plasma tumor cells or cancer biomarkers should be determined.
- Drug sensitivity testing can possibly be used for malignant therapies [15-16]. With this procedure, drug selection optimization and selections can be achieved.
- Developing a variety of different drugs to suit with various condition of patients [20].
- Data analysis supported by artificial intelligence (AI) can select effective drugs [21-26].
- Further investigation of pulmonary nodule development and treatments in new era.

Conclusion

Medical practice should be investigated in large-spectra of diagnosis and different patients. Thus, we may be ready for growing complicated conditions and wide applications in the clinic.

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