

# 肺癌におけるリンパ行性進展の発生機構ならびに病態に関する基礎的並びに臨床的研究

著者	渡辺 洋宇
著者別表示	Watanabe Yoh
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# 1994 Fiscal Year Final Research Report Summary

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## Clinical and experimental studies on lymph node metastasis in lung cancer

Research Project

### Project/Area Number

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05454382

### Research Category

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Grant-in-Aid for General Scientific Research (B)

### Allocation Type

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Single-year Grants

### Research Field

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Thoracic surgery

### Research Institution

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Kanazawa University

### Principal Investigator

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**WATANABE Yoh** Kanazawa University, professor, 医学部, 教授 (20019897)

### Co-Investigator(Kenkyū-buntansha)

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HAYASHI Yoshinobu Kanazawa University, Assistant, 医学部・付属病院, 助手 (00251950)

MURAKAMI Shinya Kanazawa University, Assistant, 医学部・付属病院, 助手 (20210007)

SHIMIZU Junzo Kanazawa University, Assistant, 医学部, 講師 (50201554)

### Project Period (FY)

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1993 – 1994

### Keywords

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Primary lung cancer / Lymphnode metastasis / Matrix metalloproteinase / Sinus histiocytosis / PCNA / Apoptosis / Prognostic factor / Model of advanced lung cancer

### Research Abstract

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- 1.Cox's multivariate analysis clarified that DNA ploidy and tumor size were significant prognostic factors of stage-1 lung cancer. DNA aneuploid tumors might have lymphnode micrometastasis and subclinical distant metastasis.
- 2.There was no relationship between the degree of sinus histiocytosis (SH) and follicular hyperplasia (FH) of metastatic lymph nodes, and histological types. But the high SH adenocarcinomas and the high FH squamous cell carcinomas showed favorable prognosis.
- 3.The activated matrix-metalloproteinase (MMP-2) was found specifically in cancer tissue. And its activity in the tumors with lymph node involvement was significantly higher than nodenegative ones. Membranous-type MMP was over-expressed in the tumor tissue, and there was relationship between the activity of MMP2 and the expression of MT-MMP.
- 4.The frequency of lymphnode metastasis correlated positively with tumor size but not with PCNA labeling index (LI) %. There was no lymphnode metastasis when the tumor was less than 30mm in diameter and the PCNA LI% was high. Difference of PCNA LI% were detected even in the same DNA ploidy pattern. The double staining technique of PCNA and DNA contents with FCM provided useful biological parameters in evaluating the malignant potential of lung cancer.
- 5.Experimental study of therapy of advanced lung cancer by M109 mouse model showed that preoperative systemic chemo-and radiation therapy was effective to reduce the number of metastatic lesions to lymphnodes and lungs.

## Research Products (8 results)

All Other

All Publications (8 results)

- [Publications] 渡辺洋宇: "肺癌とリンパ節転移" 日本臨床外科医学会雑誌. 55. 1059-1071 (1994) ▼
- [Publications] 渡辺洋宇ほか: "リンパ節転移の拡がりからみた,広範囲郭清の必要性" 胸部外科. 47. 4-9 (1994) ▼
- [Publications] 渡辺洋宇ほか: "原発性非小細胞肺癌のPCNA発現率で評価した腫瘍増殖とリンパ節転移の検討" 日本呼吸器外科学会雑誌. 8. 768-772 (1994) ▼
- [Publications] 渡辺洋宇ほか: "非小細胞肺癌におけるPC-NA発現率と核DNA量のFlowcytometerによる同時定量的解析" 肺癌. 34. 453-459 (1994) ▼
- [Publications] Watanabe, Y.: "Lung cancer and its lymphnode metastasis" Journal of Japanese Society for Clinical Surgery. 55,5. 1059-1071 (1994) ▼
- [Publications] Watanabe, Y.et al.: "Clinical significance of extended mediastinal lymph node dissection on the basis of clinicopathological analysis of nodal involvement in bronchogenic carcinoma" The Japanese Journal of Thoracic Surgery. 47,1. 4-9 (1994) ▼
- [Publications] Watanabe, Y., et al.: "Flow cytometric quantification of PCNA content in relation to lymphnode metastasis of metastasis of non-small cell lung cancer" The Journal of the Japanese Association for Chest Surgery. 8,7. 768-772 (1994) ▼
- [Publications] Watanabe, Y.et al.: "Flow cytometric quantification of PCNA and DNA contents in non-small cell lung cancer" Japanese Journal of Lung Cancer. 34,4. 453-459 (1994) ▼

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