THE EFFECTS OF 1HR BED REST ON COMPLICATIONS OF CT-GUIDED PERCUTANEOUS LUNG BIOPSY

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Nanjing Drum Tower Hospital
the Affiliated Hospital of Nanjing University
Established in 1892
3000 beds
> 5600 employees

Inpatients Dept. built in 1892
New multi-functional building

Founder: W.E. Macklin
## Oncology Center in Nanjing Drum Tower Hospital

<table>
<thead>
<tr>
<th>Outpatient clinic</th>
<th>Inpatient department</th>
<th>Radiation therapy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day-care chemotherapy</td>
<td></td>
<td></td>
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<tr>
<td>Immune cell collection room</td>
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</table>
CT-guided percutaneous lung biopsy

one of the most commonly used methods to obtain tissue. Especially for the diagnosis of peripheral lung space-occupying lesions.

- High resolution of the lesion
- Positioning accuracy
- Puncture safety
- High success rate of puncture results
Background

CT-guided percutaneous lung biopsy

• In 1883, Leyden diagnosed pneumonia with lung biopsy without guidance
• In the mid-1960s, Dahlgren underwent biopsy on TV fluoroscopy
• Lung biopsy guided by CT by Haage in 1976
Background

**Indication**

- Isolated or multiple nodular lesions in the lung, difficult to differentiate between benign and malignant
- Staging and classification of lung metastatic lesions
- The clinical decision-making of cell or histologic diagnosis before tumor radiotherapy or chemotherapy.
Pneumothorax: The main complication of lung biopsy.

- The incidence of pneumothorax ranges from 15% to 40%.
- Siner used 18~20G needles and the pneumothorax occurred 25%.
- Yeow et al reported that pneumothorax occurred in 14 of 117 lesion biopsies, which was 12%.
A large number of studies have shown that absolute bed is required after percutaneous lung biopsy.
Objective

• The objective of our study is to determine whether it is safe and feasible to stay in bed for one hour after percutaneous lung biopsy.
Study Overview

• 140 patients from July 2016 to June 2017 with CT-guided percutaneous lung biopsy were randomly divided into observation group and control group by convenient sampling method. Use random number table to arrange patients in 2 nursing group: group A patients as observation group (n = 70) and group B patients as control group (n = 70).

• There were 32 patients in the observation group, 38 females, with an average age of \(61.38 \pm 10.22\) years old; 41 males and 29 females in the control group, with an average age of \(60.71 \pm 10.71\) years old.
Study Overview

observation group

After the patient returned to the ward, he was absolutely in bed for 1 hour.

control group

After the patient returned to the ward, he was absolutely in bed for 6 hour.

Clinical follow-up: Pneumothorax, bleeding, feeling of the patients
## Related evaluation criteria

**Complication**

<table>
<thead>
<tr>
<th>Complication</th>
<th>Extremely Mild</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pneumothorax</td>
<td>----</td>
<td>Lung tissue retraction</td>
<td>Lung tissue retraction</td>
<td>Lung tissue retraction</td>
</tr>
<tr>
<td></td>
<td></td>
<td>(&lt;2\text{cm})</td>
<td>2(\sim)4\text{cm}</td>
<td>(&gt;4\text{cm})</td>
</tr>
<tr>
<td>Bleeding</td>
<td>Only imaging performance</td>
<td>1-2 times / day</td>
<td>3-4 times / day</td>
<td>(\geq5) times / day</td>
</tr>
</tbody>
</table>

**Kolcaba's scale (General Comfort Questionnaire, GCQ)**
Statistical Analysis

- The data were analyzed by SPSS19.0 software, and the mean ± standard deviation (x ± s) was used for the measurement data conforming to the normal distribution. The t-test was used. The count data was analyzed by χ^2 test, and the rank data was tested by rank sum test. P<0.05 was considered statistically significant.
## Results

### The incidence of acute radiation dermatitis

<table>
<thead>
<tr>
<th></th>
<th>Pneumothorax</th>
<th>bleeding</th>
<th>At admission</th>
<th>6h after surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>observation group</strong></td>
<td>7</td>
<td>4</td>
<td>80.371±</td>
<td>78.371±</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>3.231</td>
<td>2.994</td>
</tr>
<tr>
<td><strong>control group</strong></td>
<td>9</td>
<td>5</td>
<td>80.257±</td>
<td>73.071±</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>4.197</td>
<td>3.466</td>
</tr>
<tr>
<td><strong>P</strong></td>
<td>0.559</td>
<td>0.730</td>
<td>&gt; 0.05</td>
<td>&lt; 0.05</td>
</tr>
</tbody>
</table>

- The incidence of pneumothorax and bleeding complication at puncture site had no significant differences between the two group (P > 0.05);
- Comparison of comfort in the two groups, the observation group was superior to the control group and the difference was statistically significant (P < 0.05).
Conclusion

• 1 hour of bed rest is feasible and safe for patients undergoing CT guided percutaneous lung biopsy without increasing complications and the patient feels more comfortable.
References


References


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