

Peer Review File

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Comment 1: In radiolabeled in vivo study usually references to study conducting with human subject. This “animal” in vivo model needs to be address on the title itself. Similarly, it needs to be address in the conclusion as well.

Reply 1: We have changed the title and added the rabbit. (see Page 1, Line 2.) . Similarly, we have addressed it in the conclusion. (see Page 15, Line 218-219.).

Changes in the text: A comparison of the delivery of inhaled drugs by jet nebulizer and vibrating mesh nebulizer using dual-source dual-energy computed tomography in rabbits: a preliminary in vivo study. (see Page 1, Line 2.)

This method appears promising for describing regional lung deposition from two commonly used nebulizers during mechanical ventilation in the in vivo model of rabbits. (see Page 15, Line 220-221.).

Comment 2: Since the aim of this study was to developing radiolabeled aerosol study using DSDECT with non-radionuclide substance. The focus should be with a brief introduction and on the importance of new method and the comparisons with old procedures.

Reply 2: We added a brief introduction and the importance of DSDECT method and the comparisons with old procedures. (see Page 5, Line 64-69.).

Changes in the text: The advantages of DSDECT are that it permits free breathing without breath-hold, produces powerful images, and only needs a very small dose of contrast media. Especially for regional ventilation, DSDECT ‘s spatial resolution is much higher than that of radionuclide scanning imaging equipment. (see Page 5, Line 64-69.).

Comment 3: Line 99-100: Termination of a SVJN is usually described as sputter sound with inconsistent nebulization. The actual gas flow was not changed, rather the liquid flow toward to the gas strain was changed.

Reply 3: We have changed the termination criterion of the SVJN to sputter sound with inconsistent nebulization. (see Page 7, Line 100-102.).

Changes in the text: For the SVJN group, nebulization continued until the sputter sound

with inconsistent nebulization. (see Page 7, Line 100-102.).

Comment 4: Line 105-106: The process of rabbits after experiment is irrelevant to the study. It can be omitted.

Reply 4: We have deleted the sentence: “All rabbits were euthanized with an overdose of 5% chloral hydrate and were frozen and stored until disposal via incineration.” (see Page 7, Line 106-107.).

Changes in the text: The sentence of “All rabbits were euthanized with an overdose of 5% chloral hydrate and were frozen and stored until disposal via incineration” was deleted. (see Page 7, Line 106-107.).

Comment 5: Line 111-114: It is not clear the use of those parameters and the range.

Reply 5: Ventilation images were obtained based on the material decomposition theory. The material parameters and the range refer to line 111-114 were recognized parameters in the field of radiology and provided by experienced chest radiologists.

Changes in the text: Add the sentence “Ventilation images were obtained based on the material decomposition theory”. (see Page 8, Line 112-113.).

Comment 6: Line 111-114: Pair t-test is used for the comparison outcomes before/after intervention of one study sample group. Since this was two group comparisons, Student T-tests should be conducted. The term of “Two-tailed paired Student’s t test” was incorrect.

Reply 6: We have deleted the “two tailed paired”. (see Page 9, Line 133.).

Changes in the text: Student’s t tests were used for between-groups comparisons, and one-way analyses of variance were used for multigroup comparisons. (see Page 9, Line 133-134.).

Comment 7: Important numbers the p value numbers should be clear stated, rather listing a $p < 0.05$.

Reply 7: We changed the “ $p < 0.05$ ” to “ $P=0.024$ ”. (see Page 11 Line 153.).

Changes in the text: However, significant differences between the two groups in average CT value and iodine density were noted in the right upper lobe ($P=0.024$), as shown in *Tables 3 and 4*. line 149. (see Page 11 Line 152.).

Comment 8: Any number without a unit is meaningless. The unit of any number should be stated, such as -42.694 ± 86.986 on Line 152.

Reply 8: We have added the unit in the results. (see Page 11, Line 153-157.).

Changes in the text: The mean change in average CT value in the right upper lobe was -42.694 ± 89.986 HU in the SVJN group and 124.120 ± 83.633 HU in the VMN group ($P=0.024$; *Table 3*). The mean change in average iodine density in the right upper lobe was 0.400 ± 0.293 $\mu\text{g}/\text{cm}^3$ in the SVJN group and 1.575 ± 0.533 $\mu\text{g}/\text{cm}^3$ in the VMN group ($P=0.005$; *Table 4*). (see Page 11, Line 153-157.).

Comment 9: Line 159-160: It was not clear what previous radionuclide scans were referred. Results section should never state the comparisons to neither yours nor other studies.

Reply 9: We have deleted “than previous radionuclide scans”. (see Page 11, Line 162-163.).

Changes in the text: The DSDECT images also have a highresolution. (see Page 11, Line 162-163.).

Comment 10: Line 185: and a faster “output” rate.

Reply 10: We added the “output” instead of just rate. (see Page 13, Line 188.).

Changes in the text: One of the main reasons for this finding is that VMNs have a lower residual volume (the amount of drug that remains in the nebulizer at the end of nebulization) after nebulization and a faster output rate of nebulization than standard SJVNs due to different working principles. (see Page 13, Line 186-189.).

Comment 11: Line 193: “sinks in” should change to “deposit”

Reply 11: We have changed “sinks in” to “deposits”. (see Page 14, Line 196.).

Changes in the text: This may be because the right main bronchus is relatively straight, and the inhaled aerosol hits the wall and deposits. (see Page 13-14, Line 194-196.).

Comment 12: Animal study method should be addressed in the first sentence.

Reply 12: We added the “rabbit” in title and the conclusion, see reply 1.

Changes in the text: See reply 1.