

To the reviewer

Thank you very much for your useful comments. According to your comments, we have revised our manuscript as outlined below.

The reviewer suggests the comparisons of four groups (short-duration & low-frequency group, long-duration & low-frequency group, short-duration & high-frequency group, long-duration & high frequency group). If the authors added above data, your message may become clear for the readers.

According to your comments, we tried to reanalyze using 4 subgroups, as you suggested. In such analyses, there was variation in the number of patients in each group (short-duration & low-frequency: 58; short-duration & high frequency: 56; long-duration & low-frequency: 30; and long-duration & high frequency: 23). Among the 4 groups, there were statistical significances in the frequencies of total occlusion due to coronary spasm ($p = 0.0217$) and the unavoidable use of nitroglycerin during the spasm provocation test ($p = 0.0135$). Although statistical significances may be present between the short-duration group & the low-frequency group and between the long-duration group & the high-frequency group, contingency table analyses did not show statistically significant differences among the 4 groups. Taking these findings into consideration, we left the original analyses of the comparisons between 2 groups. However, if you feel that the 4 group comparisons are better, we can completely change the analyses to what you prefer; please give us instructions to do so.

The authors should add the definition of short-duration and long-duration more precisely in your manuscript.

According to your comments, we have added the following sentences in the "Methods" section.

1) The maximum duration of chest symptoms was determined as follows: it was 5 min when the patients and their families answered "several minutes", and it was 20 min when they answered "from 10 to 20 min".

2) The cut-off value of 15 min was in accordance with the guidelines for VSA.

How many patients did the authors perform spasm provocation tests into the LCA? Please add the number of these patients.

According to your comments, we have added the number in Table 3.

The reviewer agrees the author's some clinical implications to perform spasm provocation tests safely. The authors should add more detail in your manuscript.

The authors should add the initial dose of acetylcholine into the RCA and LCA in patients with experience of prolonged chest pain more than 15 minutes in the cathe labo.

According to your suggestions, we have some clinical implications as below.

At our institution, based on the duration of chest symptoms and/or other serious symptoms, we started the SPTs with a dose of ACh of 10 µg for the RCA and of

20 µg for the LCA.