

LETTER TO THE EDITOR

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# Non-invasive monitoring of pH and oxygen using miniaturized electrochemical sensors

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Dear Editor,

We read with great interest a recent published article by Pla et al. [1] in *Journal of Translational Medicine*. In this study, the authors investigated some variables including partial pressure of oxygen, pH, lactate, bicarbonate, and potassium in different time-points of hypoxia induction (i.e., basal, hypoxia-acidosis, and recovery periods). Therefore, they compared these variables between different time-points of measurement in one sample of 27 New Zealand White male rabbits. Since their comparisons were within-group, they were dependent to each others. However, they stated in abstract and statistical analysis section of the methods that one-way analysis of variance (ANOVA) was used to compare variables between different time-points of measurement. One-way ANOVA is used to compare numerical variables with normal distribution between more than two independent groups [2–6]. Because the comparisons in this study was performed between different time-points of measurements in one group of animals, the authors must assess normal distribution of numerical variables and then use repeated measures ANOVA or Friedman test [7–10]. Furthermore, they used student's *t*-test for comparison of numerical variables between each two time-points of measurement, while they must use paired *t*-test or Wilcoxon for comparison of numerical variables between two time-points of measurement.

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## Authors' contributions

MF: study design, writing draft of the study. SPM: study design, writing draft of the study. FT: study design, writing draft of the study. All authors read and approved the final manuscript.

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## Availability of data and materials

Not applicable.

## Declarations

## Ethics approval and consent to participate

Not applicable.

## Consent for publication

Not applicable.

## Competing interests

The authors declare that they have no competing interests.

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