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Letter to the Editor

Comment on: "Usefulness of cerebral rSO_2 monitoring during CPR to predict the probability of return of spontaneous circulation"

Dear Editor,

The recent study by Ryosuke Takegawa et al. is commendable and contributes much to the subject matter.[1] We assent to the previous opinion that rSO2 might be useful in predicting the neurologic outcomes of cardiac arrest (CA) victims. However, we still doubt about the usefulness of $\Delta rSO_2$for the prediction of return of spontaneous circulation (ROSC) concluded by Ryosuke Takegawa et al., since we thought the significance of correlation between ΔrSO_2 and ROSC might depend on the causes of CA. For example, its usefulness might become asthenic in the prediction of ROSC in large ischemic and hemorrhagic stroke caused CA.

Ryo Hiramatsu et al. had demonstrated that the rSO2 of large ischemic stroke was much lower than its contralateral area,[2] which could only be reversed by complete recanalization of the internal carotid artery. Therefore, chest compression alone without recanalization during cardiac pulmonary resuscitation might not affect the rSO_2 significantly, resulting in insignificant change of rSO_2 (ΔrSO_2). Moreover, the data in our hospital, a tertiary hospital in south west of China, demonstrated that the ROSC rate of large ischemic and hemorrhagic stroke caused CA patients, was not significant lower than those of cardiac and respiratory cause induced CA victims (88.24% vs. 92.22% and 85.50%, p = 0.093) (Table1). Taken together, we thought that insignificant change of rSO_2 didn't mean low ROSC rate in some causes of CA.

Therefore, we wrote this letter to ask Ryosuke Takegawa and colleagues if it is possible for them to disclosure the exact causes of all CA patients in their study, and strongly suggest them take the causes

Table 1 – Demographic characteristics of the population and according to the presumed cause of cardiac arrest.

	All patients (n = 1427)	Stroke cause (n = 85)	Cardiac cause (n = 167)	Respiratory cause (n = 262)	Others (n = 913)	P value
Age (years) Median (Interquartile Range)	60 (28)	64 (24.5)	61 (26)	48 (32)	56 (26)	<0.001
Male n (%)	912 (63.91)	45 (52.94)	103 (61.68)	170 (64.89)	594 (65.06)	<0.001
ROSC n (%)	1230 (86.2)	75 (88.24)	154 (92.22)	224 (85.5)	777 (85.10)	0.093
Initial rhythm—Shockable (%)	98 (6.87)	11 (12.94)	29 (17.37)	11 (4.20)	47 (5.15)	<0.001
Hospital discharge (%)	206 (14.44)	11 (12.94)	38 (22.75)	44 (16.79)	113 (12.38)	<0.001

Note: The data was from OHCA and IHCA victims administrated in Emergency Medicine department of West China Hospital, Sichuan University, from Oct. 2010 to Dec. 2016.
OHCA: out-of hospital cardiac arrest; IHCA: in hospital cardiac arrest; ROSC: return of spontaneous circulation.

of CA as stratification indicators to explore or verify the prognostic effects of ΔrSO_2 for ROSC in their further research.

Conflicts of interest

There are no conflicts of interest to declare.

REFERENCES

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Yarong He
Peng Yao
Yong Xie
Yu Cao*
Emergency Department of West China Hospital, Sichuan University, China

* Corresponding author at: Emergency department of West China Hospital, Sichuan University, 37 Guoxue Road, Chengdu, Sichuan, China.
E-mail address: yuyuer@126.com (Y. Cao).

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