

# New parameters of infusion responsiveness: Experience with Rainbow Pleth Variability Index in ICU

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## INTRODUCTION

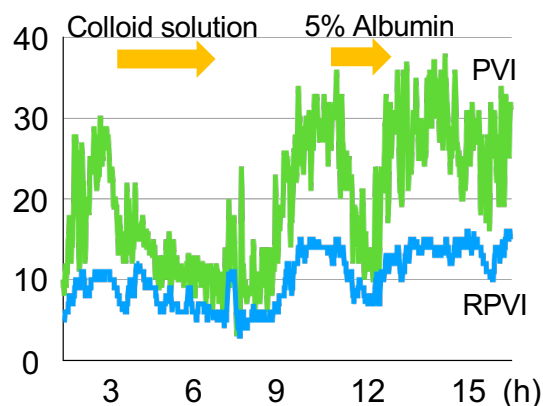
- Various parameters have been studied as dynamic indicators to predict infusion responsiveness.
- The pulse wave index (PVI) is noninvasive because it is indicated by respiratory variations in pulse oximeter amplitude.
- Recently, the Rainbow Pleth Variability Index (RPVI), a multifraction long-pulse wave variability index, has become available.



## CASES

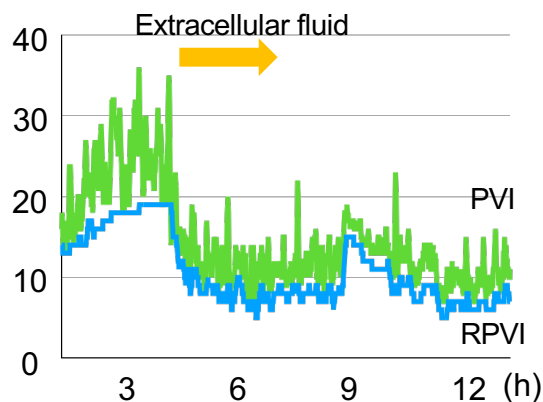
- Case 1** A man in his 50s after undergoing CABG for angina pectoris.

		RPVI	PVI
Colloid solution (1,000 mL)	before	10-12	20-27
	after	4-6	10-15
5% Albumin (250 mL)	before	13-16	28-35
	after	5-8	13-20



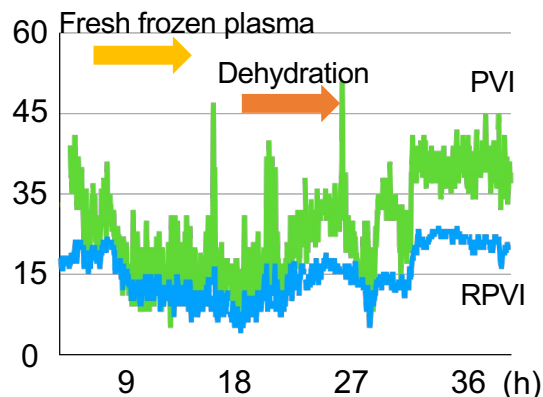
- Case 2** A woman in her 80s postoperatively for Stanford B acute aortic dissection.

		RPVI	PVI
Extracellular fluid (500 mL)	before	13-16	22-27
	after	6-9	10-12



- Case 3** A man in his 70s after thoracoabdominal aortic artery replacement surgery.

		RPVI	PVI
Fresh frozen plasma (480 mL)	before	17-20	28-41
	after	5-8	10-18
Dehydration	before	6-9	12-19
	after	15-21	32-42



## CONCLUSION

- RPVI is a potential indicator of infusion responsiveness and its values tend to be less variable than those of PVI.
- The advantages of RPVI measurement include simplicity, noninvasiveness, and low cost.
- The correlations between the RPVI and other parameters should be investigated in future studies.