Fluid loading responsiveness

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List of abbreviations

A	Area under the systolic part of the pressure curve
ABF	Aortic blood flow
ARDS	Adult respiratory distress syndrome
AUC	Area under the curve
AVR	Aortic valve replacement
BP	Blood pressure
BSA	Body surface area
C	Velocity of ultra-sound in blood
CABG	Coronary artery bypass grafting
$CaCO_2$	Arterial carbon dioxide content in blood
CaO_2	Oxygen content of arterial blood
CBV	Circulating blood volume
Cc	Computation constant
CCO	Continuous cardiac output
CI	Cardiac index
CO	Cardiac output
CO_2	Carbon dioxide
COed	Cardiac output measured with the Flo-trac Vigileo system
COem	Cardiac output measured with an electromagnetic flow probe
COhs	Cardiac output measured with the hemosonic syste
COm	Cardiac output measured with the modelflow system
COmf	Cardiac output measured with the modelflow system
COpi	Cardiac output measured with the PiCCO system
COPD	Chronic obstructive pulmonary disease
Cosθ	Angle between the direction of the ultra-sound beam and blood flow
COtd	Thermodilution cardiac output
C(P)	Pressure dependent arterial compliance
C(t)	Concentration as a function of time.
CSA	Cross sectional area
$CvCO_2$	Mixed venous carbon dioxide content in blood.
CvO_2	Oxygen content of venous blood
CVP	Central venous pressure
Dia	Diastolic arterial blood pressure
Dobu	Dobutamine
ECG	Electrocardiogram

Enox	Enoximone
$EtCO_2$	End-tidal carbon dioxide
Fd	Change in frequency (i.e. Doppler shift)
FLR	Fluid loading responsiveness
Fo	Transmitted frequency
GEDVI	Global end-diastolic volume index
Hb	Haemoglobin
HR	Heart rate
HUT	Head-up tilt
ICU	Intensive care unit
K	A calibration factor
Khi	Conversion factor
LiCl	Lithium chloride solution
LVEDA	Left ventricular end-diastolic area
LVEDAI	Left ventricular end diastolic area index
MAP	Mean arterial pressure
Mi	Amount of indicator injected
MSFP	Mean systemic filling pressure
MVP	Mitral valve plastique
Nor	Norepinephrine
NPN	Nitroprusside sodium
NVIC	Dutch Society of Intensive Care
NYHA	New York Heart Association
O_2	Oxygen
OR	Operating room
P	Pressure
Pa	Arterial pressure
PAC	Pulmonary artery catheter
$PaCO_2$	Arterial carbon dioxide pressure
PAP	Pulmonary artery pressure
Pao	Aorta pressure
PAOP	Pulmonary artery occlusion pressure
Parm	Arm equilibrium pressure
Paw	Airway pressure
PAWP	Pulmonary artery wedge pressure
PEEP	Positive end-expiratory pressure
PLR	Passive leg raising

	MSFP	Mean systemic filling pressure
	Prad	Radial artery pressure
	PRAM	Pressure recording analytical method
	PP	Pulse pressure
	Ppa	Pulmonary artery pressure
	PPV	Pulse pressure variation
	PPVli	Pulse pressure variation with LiDCO system
	Pra	Radial artery pressure
	Pvent	Ventilator pressure
	Pvr	Pressure difference between MSFP and CVP
	Q(t)	Instantaneous blood flow
	Ra	Arterial resistance
	ROC	Receiver operating curve
	RSVT	Respiratory systolic variation test
	Rsys	Total systemic resistance
	Rv	Venous resistance
	RVEDAI	Right ventricular end diastolic area index
232)	Rvr	Resistance for venous return
	S	A constant
	SA	Left ventricular stroke area
	SD	Standard deviation
	SE	Standard error
	SV	Stroke volume
	SVI	Stroke volume index
	SVR	Systemic vascular resistance
	SVV	Stroke volume variation
	Sys	Systolic arterial blood pressure
	SP	Systolic arterial pressure
	SPV	Systolic pressure variation
	SVVli	Stroke volume variation measured with LiDCO system
	SVVed	Stroke volume variation measured with FloTrac-Vigileo system
	Temp	Body temperature
	T_b	Temperature of blood in the pulmonary artery before injection of injectate
	T_i	Temperature of injectate
	TI	Tricuspid insufficiency
	TOD	Transoesophageal Doppler
	TTD	Transthoracic Doppler

TVP	Tricuspid valve plastique
V	Velocity of blood
VCO_2	Carbon dioxide production
VO_2	Oxygen production
Vt	Tidal volume
V	Arterial volume
V&W	Vincent and Weil
Vload	Amount of fluid administrated
VR	Venous return
V(s)	Stressed vascular volume
V&W	Vincent and Weil
Z	Characteristic impedance

Curriculum vitae

Bart Franciscus Geerts was born on August 29th 1979 in Amsterdam. He attended the dr. Rijk Kramerschool and the Fons Vitae Lyceum in Amsterdam. He obtained his Atheneum high school diploma at the Leeuwenhorst College in Noordwijkerhout in 1997. From 1997 he attended Biomedical Sciences at Leiden University and received his master in 2006. From 1999 he also attended medical school and received his medical degree in 2005. As a student, he worked one year full-time for the board of directors of the Leiden University Medical Centre. He was an advisor to the dean of the medical faculty, prof. dr. Vermeer, on student and educational affairs. He also performed extra-curricular internships at the Catholic Hospital in Battor Ghana and at the department of Health Action in Crises at the World Health Organisation in Geneva Switzerland. In 2011, he was certified in clinical pharmacology after attending a training program and working as a project leader in diabetes research at the Centre for Human Drug Research of prof. dr. Adam Cohen in Leiden. From 2006 to 2011 he performed several studies with dr. Jos Jansen, dr. Rob de Wilde and Jacinta Maas in the department of intensive care in the LUMC and worked on this dissertation. In 2008, he started specialty-training in the department of anaesthesiology of prof. dr. Leon Aarts at the Leiden University Medical Centre.

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