haemodynamic monitoring

most-care

up to the beat
Mostcare™ is the only monitor able to follow, in real time and from beat to beat, even the slightest haemodynamic variations in the patient.

The patented algorithm based on the PRAM method (Pressure Recording Analytical Method) evaluates the cardiac output and many other haemodynamic parameters without any prior calibration.

An immediate, customisable interface can display a broad set of information regarding the preload, afterload, cardiac contractility and efficiency, which have become vitally important elements in optimising the treatment of high-risk patients and in defining the best haemodynamic settings for patients with alterations in their cardiovascular systems.
MostCare is a reliable and efficient system that adapts to a wide range of patient types and clinical conditions. Thanks to its rapid set-up, information can be obtained in real-time and saved, reviewed and transferred for subsequent analysis. The Endless and On Demand versions allow the operator to choose the method of use which best suits the specific needs, thereby guaranteeing an effective control on costs.

Advantages

- **Simple**
  - No calibration needed.
  - Intuitive, customizable interface.
  - No change in protocols in use.

- **Quick**
  - Constant monitoring with immediate results.
  - Rapid connection and set up.

- **Versatile**
  - Any peripheral or femoral artery.
  - Applicable to the widest range of patients.
  - Easily transferred from one patient to another.

- **Innovative**
  - Exclusive variables (CCE, dicrotic pressure, Ea).
  - Patented dynamic filter to guarantee the quality of the pressure signal.
  - Modern connectivity and data transfer systems.

- **Reliable**
  - Patented and validated algorithm.
  - Immediate response to even the smallest haemodynamic variations.
  - A wide range of clinical papers available.

- **Convenient**
  - Can be used on numerous patients without disposable nor added elements.
  - On Demand system adaptable to all uses.
PRM (Pressure Recording Analytical Method) is an innovative method to analyse the pressure wave used in MostCare™. It allows for constant and sensitive monitoring in real time of the slightest haemodynamic variations because it is based, heart beat by heart beat, only on the morphology of the arterial pressure wave.

Each patient is unique and his haemodynamic condition can evolve rapidly. The shape of the arterial pressure wave is the result of a complex balance which depends on both the pairing of the cardiac function with the vascular system and their interaction with the respiratory system.

The precise analysis of the shape of the wave obviates the need for calibration and pre-estimated data about the patient. It also identifies the dicrotic pressure and the Z(t) impedance of the cardiovascular system, even in cases of unusual pressure wave forms.
Pulse pressure variation (PPV) and stroke volume variation (SVV) during the respiratory cycle can be viewed simultaneously.

The shape of the pressure curve can be affected by resonance phenomena. The exclusive, dynamic filter in MostCareUp has been designed to automatically optimise the quality of the wave and to reduce these phenomena2.

Cardiac cycle efficiency (CCE) is an exclusive variable which describes haemodynamic performance in terms of energy expenditure in the patient being monitored2.

The maximum pressure variation compared to time (dP/dt_max) is linked to the heart’s contractility and also to the condition of the vascular system.

Sysolic, diastolic, mean and pulse pressure (PP) are measured with every heartbeat.

The stroke volume (SV) is measured beat-by-beat and allows for the cardiac output (CO) to be calculated.

Systemic vascular resistance (SVR), cardiac power output (CPO) and oxygen delivery (DO2) are examples of the derived variables provided by MostCareUp™.

The value of the dicrotic pressure, gauged with precision at 1000Hz, provides information about the vascular condition and the ventricle-arterial pairing.

haemodynamic variables
MostCareUp supports the most advanced communication and data transmission standards. The patient’s parameters and freeze-frames can be saved to the machine’s memory or exported via the USB port. The data can also be transferred to the hospital’s platform using the HL7 protocol. The image on the display can be shared for monitoring or educational purposes via HDMI.

MostCareUp guarantees the maximum flexibility and cost efficiency thanks to the various ways in which it can be used. The On Demand version of the monitor can be activated for a single use or for periods of time to meet specific application needs. The Endless version allows an unlimited use of the system without additional cost.

MostCareUp can display trends for many haemodynamic variables simultaneously. It is also possible to insert personalized markers during specific events (e.g., start treatment).

The do&check function was designed specifically to help the clinic when monitoring haemodynamic variations following specific treatments (e.g., fluid challenge).

Markers and trends

Do & Check function

Connectivity and data management

Flexibility of use

Endless - On Demand
Optimising the flow of fluids in high risk surgery patients has significantly reduced postoperative complications, recovery time, and improved the outcome of the patients, thus resulting in substantially lower costs.

- Pearse R et al., Crit Care, 2005
- Lopes MR et al., Crit Care, 2007
- Vincent JL et al., Crit Care, 2015

Thanks to beat-by-beat analysis, the PRAM method is able to reliably recognise and monitor the haemodynamic changes resulting from the administration of vasoactive drugs and fluids, in real time and even in patients with various comorbidities and conditions.

- Vincent JL et al., Crit Care, 2011
- Franchi F et al., BJA, 2011
- Guarracino F et al., Crit Care, 2014
- Donati A et al., J Crit Care, 2014

More specifically, during haemodynamic instability or in the presence of acute clinical variations in high-risk patients.

The PRAM method requires no external calibration or anthropometric normalisation. MostCare® can therefore be easily used on any patient who requires constant or occasional haemodynamic monitoring.

More specifically, during haemodynamic instability or in the presence of acute clinical variations in high risk patients.
evaluation of the ventricular function

The echocardiography is a gold standard technique to evaluate ventricular function. Some of the variables provided by MostCare™, such as dP/dt\textsubscript{max} and COE, supply a constant stream of information about the cardiac function in the critical patient.

- 11 Scolletta S et al., Intensive Care Med, 2013
- 12 Giglioli C et al., Eur J Heart Fail, 2011
- 14 Barile L et al., J. Cardiothorac Vasc Anesth, 2013

cardiac insufficiency

The beat-by-beat monitoring of haemodynamic variables like dicrotic pressure, dP/dt\textsubscript{max} and COE guarantees a rapid and precise evaluation of any clinical variations in the patient so that immediate action can be taken.

- 11 Scolletta S et al., Intensive Care Med, 2013

S p e c i f i c a p p l i c a t i o n s

donor

- 11 Scolletta S et al., Intensive Care Med, 2013

paediatric patient

- 11 Scolletta S et al., Intensive Care Med, 2013
- 12 Mazza M et al., Crit Care, 2013

ventilation

- 11 Scolletta S et al., Intensive Care Med, 2013

obese patient

- 11 Scolletta S et al., Crit Care, 2013

aortic counterpulsation

- 11 Scolletta S et al., Intensive Care Med, 2013
- 12 Mazza M et al., Crit Care, 2013

interventional cardiology

- 11 Scolletta S et al., Intensive Care Med, 2013
- 12 Mazza M et al., Crit Care, 2013

hypothermia therapy

- 11 Scolletta S et al., Intensive Care Med, 2013

Codes

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