Medical Fluids

Medical Fluids :: An International Journal on Critical Care Fluid Management

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5th International Fluid Academy Days, November 26—28, 2015, Antwerp, Belgium

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Satellite Master Class Symposia
Supported by unrestricted educational grants from:

- ✓ Baxter
- ✓ Fresenius-Kabi
- ✓ Maquet Getinge
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Antwerp Hilton Hotel

INVITATION

Friday
November 27th
1 to 2 PM

Baxter Symposium

Chairman: Dr. Niels Van Regenmortel – Antwerp, Belgium

- **Maintenance Fluids: From Recommendations to Daily Practice**
  Prof. Dileep N. Lobo – Nottingham, United Kingdom

- **Renal Recovery and Modality Choice**
  Dr. John R. Prowle – London, United Kingdom

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Haemodynamic Monitoring **on the highest level**
Invitation to Innovation

MAQUET
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5th International Fluid Academy Days
November 26th to 28th 2015
Hilton Congress Centre, Antwerp, Belgium

Tips and Tricks to get the most out your *PiCCO*.

Speaker: Dr. Manu Malbrain
Date: Friday November 27th
Time: 13:00 till 13:30

- Continuous cardiac output trend
- Pulse contour analysis
- Advanced haemodynamic parameters
- Bedside pulmonary oedema assessment
- Cardiac preload quantification
- Multiple vascular access options including pediatric patients
- Continuous $ScvO_2$
- Liver function assessment by ICG plasma disappearance rate

5th International Fluid Academy Days
Satellite Symposium – Track B

MAQUET
GETINGE GROUP

November 26th to 28th 2015
Hilton Congress Centre, Antwerp, Belgium

How to get the most out of a ventilator and NAVA

Speaker: Pr. Diederik Gommers, Erasmus MC, Rotterdam
Date: Friday November 27th
Time: 13:30 – 14:00

NAVA. Personalized ventilation
Edi. The patient's respiratory drive linking the **brain** to the **ventilator**

FRESENIUS KABI
caring for life

Satellite Symposium

HES in trauma: Status quo and perspectives

Friday, 27th November 2015
14:00 - 14:30 h, Track A

Prof. Karim Asehnoune
Head, Surgical Intensive Care Unit, PTMC Building, CHU Nantes, F-44000 France

www.fresenius-kabi.com

Edwards Symposium

Friday, November 27, 2015
14.00 – 14.30
International Fluid Academy Days (IFAD)
Track B

Take action
To enhance your patient's recovery.

Perioperative Goal Directed Therapy Optimization: Something for us?
Alexandre JOOSTEN
(Erasme University Hospital, Brussels, Belgium)

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Anaesthesiology Intensive Therapy

Anestezjologia Intensywna Terapia

Official Journal of the Polish Society of Anaesthesiology and Intensive Therapy

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From 1 September 2014, "Anaesthesiology Intensive Therapy" will no longer accept submissions of case reports under the article category of 'Case Report'. Instead, they may be submitted under the article category of 'Letter to the Editor'. As case reports will no longer be a priority for this Journal, only exceptional ones will be considered for publication in AIT. Please refer to the 'Letter to the Editor' article category for information on the format, word limit and the numbers of references and images allowed for this article category. Letters to the Editor are published in full in both the print and electronic versions of AIT.

Case reports accepted before 1 September 2014 will be processed and published as at present.

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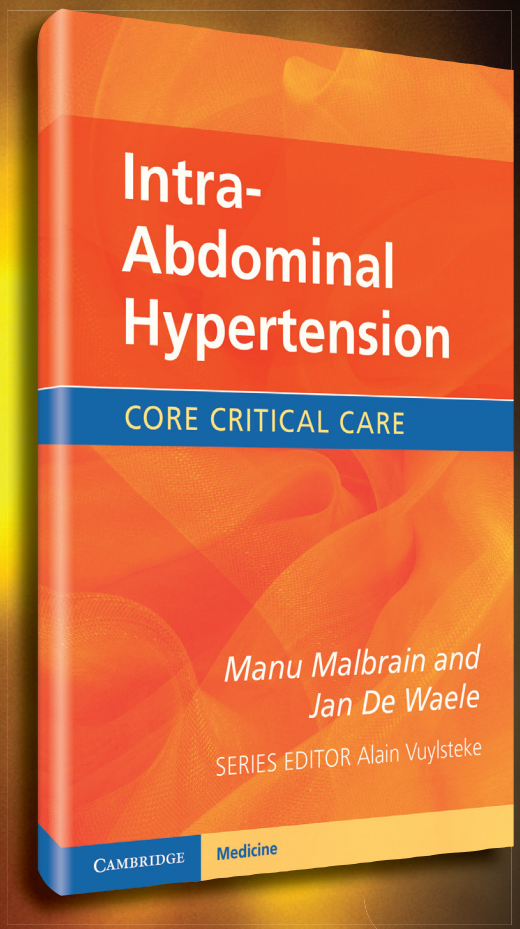

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- Read table of contents at **www.cambridge.org/IAH**

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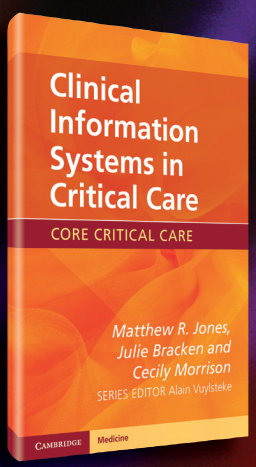

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- → European support functions
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- → Established in Belgium since 1978

LESSINES

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- The Medical Products unit covers the supply of basic materials for the manufacture of plastic bags in all of Baxter's production lines. The unit also produces millions of bags used for peritoneal dialysis, drug infusion or nutrition of patients treated in the hospital or at home.
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- Established in 1996

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- The first commercialized artificial kidney
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In order to stimulate partnerships and innovation, Baxter created the "Baxter Belgian Award – Clinical Pharmacy". This prestigious award is given every two years to health care professionals who innovate in the challenging area of clinical pharmacy in Belgium.

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Sustainability is integral to our business

Baxter's commitment to sustainable development is linked to societal goals that go over and above its mission. Improving access to health care, encouraging diversity and inclusion, enhancing education and reducing the impact on the environment are all areas in which Baxter intends to contribute to the common good. Acting with integrity, ensuring the health and safety of its employees and developing partnerships with suppliers to ensure a greener supply chain are as important for the group as its industry leadership position.

The Baxter International Foundation The Baxter International Foundation, established in 1981, is the philanthropic arm of the group worldwide. Its mission is to increase access to healthcare – particularly for the disadvantaged and underserved – in and near communities where Baxter employees live and work. In Belgium, the Foundation supports organizations such as *Sauvez Mon Enfant* (Save My Child) (Brussels) or *Kinderkankerfonds* (The Children's Cancer Fund) (Ghent).

The Baxter International Foundation

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1420 Braine-l'Alleud

Individualize your burn resuscitation with **PiCCO**

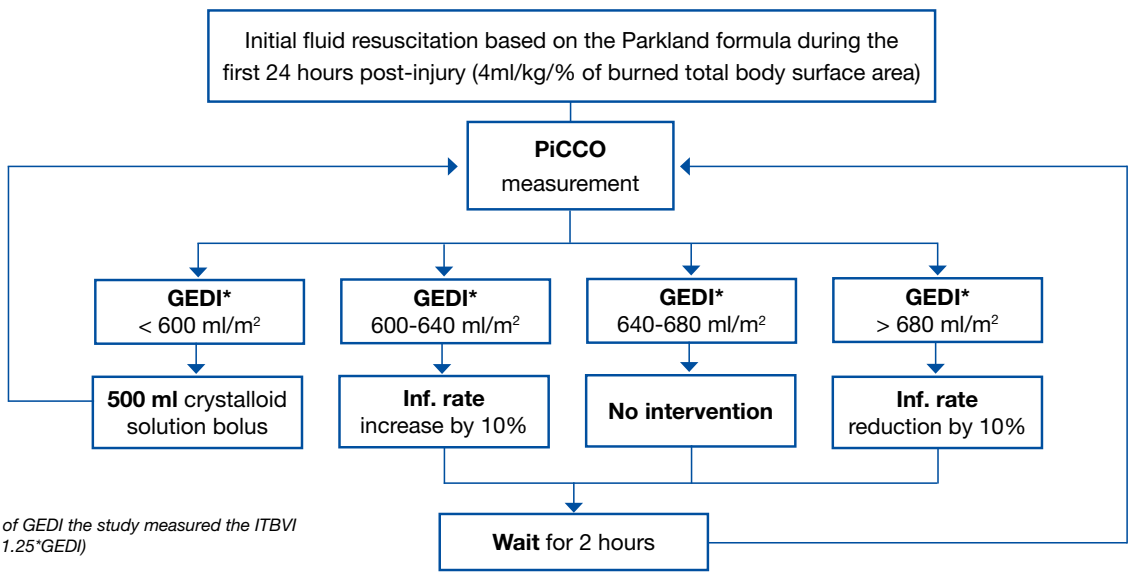
Currently the most common practice for volume management in burn patients is based on the Parkland or Brooks formulas which estimate the amount of fluid based on burn size and body weight. The result is monitored only by Hourly Urine Output (HUO) and Mean Arterial Pressure (MAP).

Numerous studies have shown that this treatment strategy is far from perfect:

Study	Outcome of study
Sánchez-Sánchez M. et al. A protocol for resuscitation of severe burn patients guided by transpulmonary thermodilution and lactate levels: a 3-year prospective cohort study[2]	*The surveyed data support previous studies showing that urine output and vital signs, such as blood pressure and heart rate, are insufficient to guide resuscitation of critically burned patients.* ***PiCCO derived GEDI* should be used as the parameter to guide fluid management.***
Csontos C. et al. Arterial thermodilution in burn patients suggests a more rapid fluid administration during early resuscitation[1]	*A number of studies have proved that the Parkland Formula frequently underestimates the water and electrolyte loss of burned patients. The surveyed data suggest that the PiCCO derived* ***GEDI* is a better target parameter than HUO*** *in the fluid resuscitation of severely burned patients in the first 3 days post-injury.*
Holm C. et al.Intrathoracic blood volume as an end point in resuscitation of the severely burned: an observation study of 24 patients[3]	*Resuscitation guided by* ***PiCCO-Technology should become the standard in the treatment of large burns,*** *as only invasive multi-parametric monitoring may reflect the true hemodynamic status of these patients.*

- About 24 hours post burn injury HUO and MAP may provide inadequate and unreliable information on the patient's actual volume status due to renal insufficiency / acute renal failure[1]
- The Parkland or Brooks formulas often underestimate the water and electrolyte losses[2]
- Furthermore, static formulas may mislead therapeutic decisions because they do not consider the individual patient's conditions during the course of treatment

PiCCO measurements enable patient individualized fluid resuscitation protocols as used by Csontos et al.[1]



**Instead of GEDI the study measured the ITBVI (ITBVI = 1.25*GEDI)*

Get equipped for all eventualities:
PiCCO & EIRUS

What if…

…the location of the patient's burn injury prohibits the insertion of the PiCCO catheter into the femoral artery?
PULSION offers PiCCO catheters in different sizes which can be applied at other insertion points (brachial, axillary or radial).

…you want to use the PiCCO-Technology in severely burned pediatric patients?
Specially developed pediatric 3 French catheter is available.

…the location of the patient's burnt tissue is prohibiting the application of a standard jugular CVC to perform a thermodilution?
The transpulmonary thermodilution also works with a femoral CVC. GEDI values will be corrected automatically by the software.
In less severe cases there is the possibility to use the ProAQT-Technology which provides cardiac output trend monitoring, but does not require a CVC.

…you want to measure lactate values continuously to optimize your burn resuscitation protocol and improve patient outcome?
EIRUS is a unique continuous monitoring platform for both lactate and glucose. EIRUS eliminates the risk of trend gaps and reduces the workload of the nursing staff. This new technology is developed by Maquet and distributed by PULSION.

Literature references

1. Csontos C. et al. Arterial thermodilution in burn patients suggests a more rapid fluid administration during early resuscitation. Acta Anaesthesiol Scand 2008; 52(6): 742-749.
2. Sánchez-Sánchez M. et al. A protocol for resuscitation of severe burn patients guided by transpulmonary thermodilution and lactate levels: a 3-year prospective cohort study. Critical Care 2013; 17(4): R176.
3. Holm C. et al. Intrathoracic blood volume as an end point in resuscitation of the severely burned: an observation study of 24 patients. J Trauma 2000; 48(4): 728-34.
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6. Eisenberg P.R. et al. A prospective study of lung water measurements during patient management in an intensive care unit. Am Rev Respi Dis 1987; 136(3): 662-668.

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Glucion 5% en Glucion 10%

NAAM VAN HET GENEESMIDDEL: **Glucion 5 %**, oplossing voor infusie. **Glucion 10 %,** oplossing voor infusie. **KWALITATIEVE EN KWANTITATIEVE SAMENSTELLING VAN DE WERKZAME BESTANDDELEN**: **Glucion 5 %**: Glucose monohydraat: 55,0 g/l; Natriumlactaat 60% pH 5,3: 3,55 g/l; Natriumchloride: 2,00 g/l; Dikaliumfosfaat: 1,08 g/l; Kaliumchloride:1,00 g/l; Melkzuur: 540 mg/l; Melkzuur: 540 mg/l; Magnesiumchloridehexahydraat: 533 mg/l; Na^+: mmol/l: 54 - mEq/l: 54; K^+: mmol/l: 26 - mEq/l: 26; Mg^{2+}: mmol/l: 2,6 - mEq/l: 5,2; Cl^-: mmol/l: 55 - mEq/l: 55; Lactaat: mmol/l: 25 - mEq/l: 25; HPO_4^{2-}: mmol/l: 6,2 - mEq/l: 12,4; 200 kcal/l (840 kJ/l). **Glucion 10 %**: Glucose monohydraat: 110,0 g/l; Natriumlactaat 60%, pH 5,3: 3,55 g/l; Natriumchloride: 2,00 g/l; Dikaliumfosfaat: 1,08 g/l; Kaliumchloride: 1,00 g/l; Melkzuur: 540 mg/l; Magnesiumchloridehexahydraat: 533 mg/l; Na^+: mmol/l: 54 - mEq/l: 54; K^+: mmol/l: 26 - mEq/l: 26; Mg^{2+}: mmol/l: 2,6 - mEq/l: 5,2; Cl^-: mmol/l: 55 - mEq/l: 55; Lactaat: mmol/l: 25 - mEq/l: 25; HPO_4^{2-}: mmol/l: 6,2 - mEq/l: 12,4; 400 kcal/l (1680 kJ/l). **FARMACEUTISCHE VORM**: Oplossing voor infusie. Hypertone, steriele en endotoxinevrije oplossing. **Glucion 5 %**: Osmolariteit: 443 mosmol/l, pH: 4,00-5,20. **Glucion 10 %**: Osmolariteit: 721 mosmol/l, pH: 4,00-5,20. **THERAPEUTISCHE INDICATIES**: GLUCION 5 % en 10 % zijn aangewezen als onderhoudsbehandeling voor de vocht- en elektrolytenbalans ter compensatie van normaal vochtverlies via de ademhaling, zweet en de uitscheiding van urine. Deze oplossing voorziet in de normale behoeften van water, elektrolyten en calorieën. De oplossing is ook aangewezen om een lichte dehydratie met metabole acidose te corrigeren (fistels, brandwonden, koorts, braken, …). **DOSERING EN WIJZE VAN TOEDIENING**: De dosering is afhankelijk van de leeftijd, het gewicht en de klinische toestand van de patiënt. Om te voorzien in de normale behoeften van een volwassene, kan 2500 tot 3000 ml/dag worden toegediend. De toedieningssnelheid bedraagt doorgaans 4 tot 6 ml/minuut. De via injectie toegediende hoeveelheid kalium mag niet meer bedragen dan 20 mmol/uur en 80 mmol/dag. Bovengenoemde dosering mag niet als een absolute regel worden beschouwd, maar moet worden aangepast op grond van de klinische toestand van de patiënt. Het is vooral nuttig de bloedanalyses te herhalen en de diurese te controleren, met name tijdens de eerste uren van de parenterale rehydratie. **CONTRA-INDICATIES**: overgevoeligheid voor de werkzame bestanddelen of voor één van de hulpstoffen; nieraandoeningen die gepaard gaan met kaliumretentie; hyperkaliëmie; hyperlactatemie; intracraniale bloedingen; hyperhydratie (vochtintoxicatie); metabole alkalose; leveraandoeningen die normaal lactaatmetabolisme verhinderen; gedecompenseerde diabetes of glucose-intolerantie. **BIJWERKINGEN**: Bijwerkingen die verband kunnen houden met de wijze van toediening, omvatten koortsreactie, infectie op de plaats van injectie, lokale pijn of reactie, irritatie van de ader, veneuze trombose of flebitis vanaf de plaats van injectie, extravasatie en hypervolemie. Bij een langdurige of te snelle infusie bestaan er risico's die verband houden met de glucose en elektrolyten in de oplossing. De intraveneuze toediening van glucoseoplossingen (met name hyperosmotische oplossingen) kan lokaal leiden tot pijn, irritatie van de ader en tromboflebitis. Overgevoeligheidsreacties die gekenmerkt zijn door urticaria, zijn af en toe beschreven na intraveneuze toediening van magnesiumzouten.De volgende tabel bevat het aantal gevallen per systeemorgaanklasse/gemelde symptomen, volgens de MedDRA 6.1.-classificatie:

Frequentie	Systeemorgaanklasse	Symptomen (MedDRA 6.1.)
soms (> 1/1000, < 1/100)	Algemene aandoeningen en toedieningsplaatsstoornissen	pijn op de plaats van venepunctie
	Bloedvataandoeningen	tromboflebitis
	Bloedvataandoeningen	flebitis
zelden (> 1/10 000, < 1/1000) tot zeer zelden (< 1/10 000)	Immuunsysteemaandoeningen	urticaria
	Voedings- en stofwisselingsstoornissen	hyperglykemie
	Voedings- en stofwisselingsstoornissen	alkalose
	Voedings- en stofwisselingsstoornissen	lactaatacidose
	Voedings- en stofwisselingsstoornissen	hyperhydratie (vochtretentie)
	Voedings- en stofwisselingsstoornissen Nier- en urinewegaandoeningen	hypernatriëmie glucosurie
	Huid- en onderhuidaandoeningen	zweten (hyperhidrose)
	Bloedvataandoeningen	hypotensie

HOUDER VAN DE VERGUNNING VOOR HET IN DE HANDEL BRENGEN: Baxter S.A., Bd René Branquart 80, B-7860 Lessines, België. **NUMMER(S) VAN DE VERGUNNING VOOR HET IN DE HANDEL BRENGEN**: Glucion 5 %, oplossing voor infusie (500 ml): BE147016; Glucion 5 %, oplossing voor infusie (1000 ml): BE147025; Glucion 10 %, oplossing voor infusie (500 ml): BE003507; Glucion 10 %, oplossing voor infusie (1000 ml): BE124932. **AFLEVERINGSWIJZE**: Geneesmiddel op medisch voorschrift. **DATUM VAN HERZIENING VAN DE TEKST**: Januari 2014. Goedkeuringsdatum : 02/2014. Voor informatie over bijzondere waarschuwingen en voorzorgen bij gebruik, interacties, zwangerschap en borstvoeding, rijvaardigheid en het bedienen van machines, overdosering, farmacologische eigenschappen en farmaceutische gegevens, raadpleeg de volledige versie van de samenvatting van de productkenmerken.

Glucion 5% et Glucion 10%

DENOMINATION DU MEDICAMENT: **Glucion 5 %**, solution pour perfusion. **Glucion 10 %,** solution pour perfusion. **COMPOSITION QUALITATIVE ET QUANTITATIVE DES SUBSTANCES ACTIVES**: **Glucion 5 %**: Glucose monohydraté: 55,0 g/l; Lactate de sodium 60%, pH 5,3: 3,55 g/l; Chlorure de sodium: 2,00 g/l;Phosphate dipotassique: 1,08 g/l; Chlorure de potassium:1,00 g/l; Acide lactique: 540 mg/l; Chlorure de magnésium hexahydraté: 533 mg/l; Na^+: mmol/l: 54 - mEq/l: 54; K^+: mmol/l: 26 - mEq/l: 26; Mg^{2+}: mmol/l: 2,6 - mEq/l: 5,2; Cl^-: mmol/l: 55 - mEq/l: 55; Lactate: mmol/l: 25 - mEq/l: 25; HPO_4^{2-}: mmol/l: 6,2 - mEq/l: 12,4; 200 kcal/l (840 kJ/l). **Glucion 10 %**: Glucose monohydraté: 110,0 g/l; Lactate de sodium 60%, pH 5,3: 3,55 g/l; Chlorure de sodium: 2,00 g/l; Phosphate dipotassique: 1,08 g/l: Chlorure de potassium: 1,00 g/l; Acide lactique: 540 mg/l; Chlorure de magnésium hexahydraté: 533 mg/l; Na^+: mmol/l: 54 - mEq/l: 54; K^+: mmol/l: 26 - mEq/l: 26; Mg^{2+}: mmol/l: 2,6 - mEq/l: 5,2; Cl^-: mmol/l: 55 - mEq/l: 55; Lactate: mmol/l: 25 - mEq/l: 25; HPO_4^{2-}: mmol/l: 6,2 - mEq/l: 12,4; 400 kcal/l (1680 kJ/l). **FORME PHARMACEUTIQUE**: Solution pour perfusion. Solution hypertonique, stérile et exempte d'endotoxines. **Glucion 5 %**: Osmolarité: 443 mosmol/l; pH: 4,00-5,20. **Glucion 10 %**:Osmolarité: 721 mosmol/l; pH: 4,00-5,20. **INDICATIONS THERAPEUTIQUES**: GLUCION 5 % et 10 % sont indiqués dans les traitements de maintenance de l'équilibre hydroélectrolytique pour compenser les pertes normales en liquide dues à la respiration, la transpiration et l'excrétion urinaire. Cette solution couvre les besoins normaux en eau, électrolytes et calories. Elle est également indiquée pour corriger une légère déshydratation avec acidose métabolique (fistule, brûlure, fièvre, vomissement, …). **POSOLOGIE ET MODE D'ADMINISTRATION**: La posologie dépend de l'âge, du poids et de l'état clinique du patient. Pour couvrir les besoins normaux chez un adulte, on peut administrer 2500 à 3000 ml/jour. La vitesse d'administration est généralement de 4 à 6 ml/minute. La quantité de potassium injectée ne doit jamais dépasser 20 mmol/heure et ne pas excéder 80 mmol/jour. La posologie énoncée ci-dessus ne doit pas être considérée comme étant une règle absolue et devrait être adaptée en fonction de l'état clinique de chaque patient. Il est particulièrement utile de répéter les analyses sanguines et de surveiller la diurèse, principalement au cours des premières heures de la réhydratation parentérale. **CONTRE-INDICATIONS**: hypersensibilité aux substances actives ou à l'un des excipients; affections rénales accompagnées de rétention de potassium; hyperkaliémie; hyperlactatémie; saignements intracrâniens; hyperhydratation (intoxication hydrique); alcalose métabolique; affections hépatiques ne permettant pas la métabolisation normale du lactate; diabète décompensé ou intolérance au glucose. **EFFETS INDESIRABLES**: Les effets indésirables peuvent être associés à la technique d'administration et comprennent réponse fébrile, infection au site d'injection, douleur ou réaction locale, irritation veineuse, thrombose veineuse ou phlébite s'étendant à partir du site d'injection, extravasation et hypervolémie. En cas de perfusion prolongée ou trop rapide, il existe des risques liés au glucose et aux électrolytes contenus dans la solution. L'administration intraveineuse de solutions de glucose (particulièrement les solutions hyper- osmotiques) peut provoquer localement une douleur, une irritation veineuse et une thrombophlébite. Les réactions d'hypersensibilité caractérisées par de l'urticaire ont été occasionnellement décrites après l'administration intraveineuse de sels de magnésium. Le tableau suivant reprend le nombre de rapports par classe du système d'organes primaire/symptômes rapportés, selon la classification MedDRA 6.1.:

Fréquence	Classe du système d'organes	Symptômes (MedDRA 6.1.)
peu fréquent (> 1/1000, < 1/100)	Troubles généraux et anomalies au site d'administration	douleur au site de ponction veineuse
	Affections vasculaires	thrombophlébite
	Affections vasculaires	phlébite
rare (> 1/10 000, < 1/1000) à très rare (< 1/10 000)	Affections du système immunitaire	urticaire
	Troubles du métabolisme et de la nutrition	hyperglycémie
	Troubles du métabolisme et de la nutrition	alcalose
	Troubles du métabolisme et de la nutrition	acidose lactique
	Troubles du métabolisme et de la nutrition	hyperhydratation (rétention hydrique)
	Troubles du métabolisme et de la nutrition	hypernatrémie
	Affections du rein et des voies urinaires	glycosurie
	Affections de la peau et du tissu sous-cutané	sudation (hyperhidrose)
	Affections vasculaires	hypotension

TITULAIRE DE L'AUTORISATION DE MISE SUR LE MARCHE: Baxter S.A., Bd René Branquart 80, B-7860 Lessines, Belgique. **NUMEROS D'AUTORISATION DE MISE SUR LE MARCHE**: Glucion 5 %, solution pour perfusion (500 ml): BE147016; Glucion 5 %, solution pour perfusion (1000 ml): BE147025; Glucion 10 %, solution pour perfusion (500 ml): BE003507; Glucion 10 %, solution pour perfusion (1000 ml): BE124932. **STATUT LEGAL DE DELIVRANCE**: Sur prescription médicale. **DATE DE MISE A JOUR DU TEXTE**: Janvier 2014 Date d'approbation:02/2014.Pour des informations concernant les mises en garde spéciales et précautions d'emploi, les interactions, la grossesse et l'allaitement, l'aptitude à conduire des véhicules et à utiliser des machines, le surdosage, les propriétés pharmacologiques et les données pharmaceutiques,consulter la version complète du résumé des caractéristiques du produit.

BEMP/MG216/15-001(1) – Date of creation/review : Oct 2015

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Reduce Complications in Subarachnoid Hemorrhage ...

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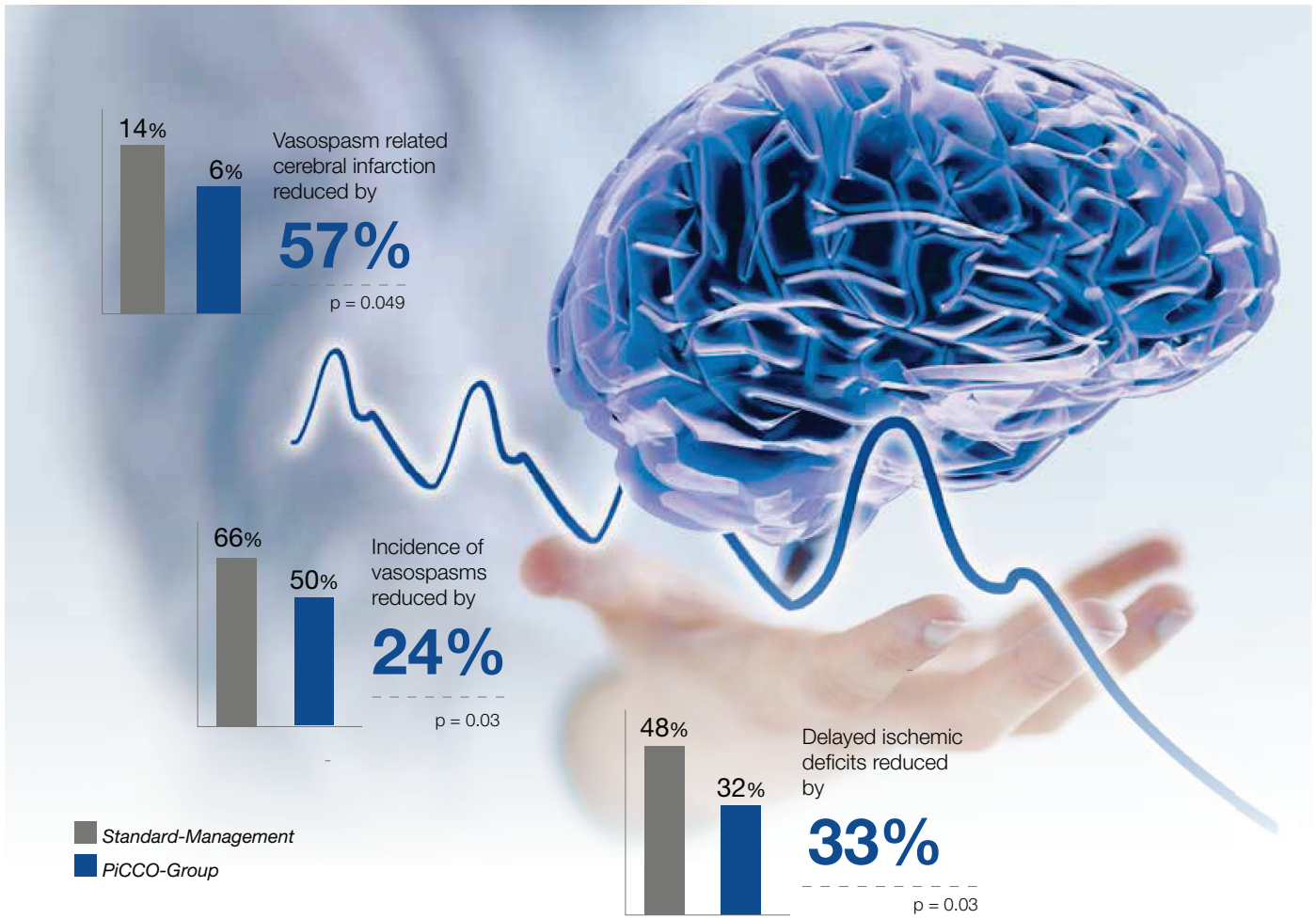

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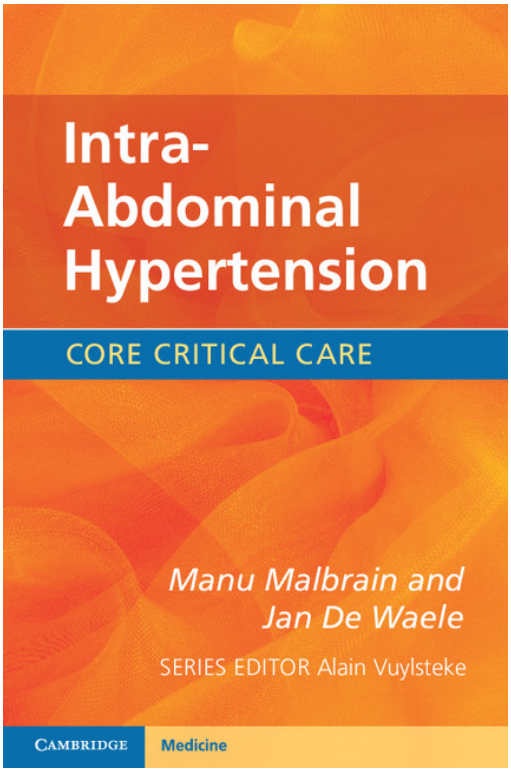

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Intra-Abdominal Hypertension

Manu Malbrain and Jan De Waele

Despite increasing interest in intra-abdominal hypertension (IAH) and abdominal compartment syndrome (ACS) as causes of significant morbidity and mortality among the critically ill, unanswered questions cloud the understanding of the pathophysiology of these conditions: • Are IAH and ACS synonymous? • What are the ideal methods of measuring and lowering intra-abdominal pressure (IAP)? • When should we think of IAH? • Can IAH be prevented? • What level of IAP requires abdominal decompression? Written by two experts in critical care and IAP, Intra-Abdominal Hypertension is a distillation of the current literature and furthers the understanding of these complex critical conditions. Using a step-by-step approach and illustrative figures, this clinical handbook presents a concise overview of consensus definitions, measurement methods, organ assessment and treatment options. Intra-Abdominal Hypertension is essential reading for all members of the intensive care multidisciplinary team, including experienced and junior physicians, anesthetists and nurses.

• Contains a complete and concise overview of IAH and ACS which aids quick and accurate learning
• List of all currently available IAP measurement tools enables decisive treatment
• Summary of consensus definitions distils the current literature and clarifies these conditions

Contents

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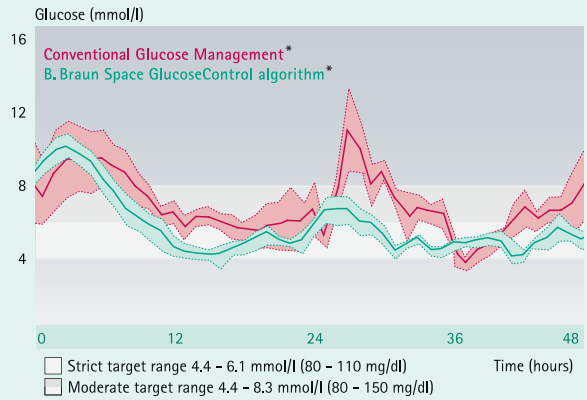

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The view from bed

THEMES

ARDS-1 and 2 • Sepsis – 1 and 2 • Fluids • Ventilation • Renal • Haematology • Ultrasound • ICU issues • Infections • Haemodynamic monitoring • Man power and quality of care in ICU • Prevention • Antibiotics • Neuro Critical Care • Topics 1,2,3,4,5,and 6 • Special Lecture-10 pitfalls in Intensive Care

PRO – CON DEBATES

- All central vein cannulations should be placed using ultrasound guidance
- Whether "rounds"as currently practiced are outdated
- SDD – "the unused therapy" : we should be using

MASTER CLASS

Bleeding in ICU

ROUND TABLE

- End of life care (experts from five continents)
- Safety in Intensive Care

TUTORIALS / WORKSHOPS

Vasoactive drugs • ICU rounds with Frank-Starling • Acute Pancreatitis • Examination in Coma • How to interpret SVO_2/$ScVo_2$? • Understanding diagnostic tests • Primer of safety in ICU • Social media and ICM • Ultrasound guided procedures in Critical Care • Airways emergencies: Rescue and exchange including the management of leaking tubes • Interpreting acid-base abnormalities in the third millennium

AFTER DINNER SPEECH

Why has the safety and quality movement been slow to improve Critical Care outcomes?

TEN REASONS TO ATTEND THE 13TH ACCS

1. Great pro-con debates such as Ultrasound use in CV line, SDD, Ward rounds - what should be the practice
2. Use of ultrasound in ICU 3. Tutorials in small groups 4. Wide and varied topics
5. Themes such as Sepsis, ARDS, ICU issues, Manpower, Fluids and Renal 6. Best faculty from five continents
7. Affordable price 8. Master-class 9. Great Venue 10. Excellent networking opportunity

WHO SHOULD ATTEND?

a. Intensive Care Consultants b. Anaesthetists c. Acute Medicine Consultants d. Emergency Medicine Consultants e. General Medical Consultants f. SAS and Trust doctors in the above specialities g. Microbiologists h. Trainees in the above fields i. Nurse specialists and practitioners in emergency medicine, acute medicine and critical care j. Physiotherapists

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