3. Several retrospective studies have compared established transfusion regimens to more restrictive approaches with hemoglobin (hb) triggers of 7-8 g/dl (vs. 9-10), but no change of mortality was found. The only prospective randomized study in critically ill patients could not identify any beneficial effect of a liberal transfusion strategy on outcome (2). One large chart analysis in patients with myocardial infarction showed that trans-fusions decrease mortality in patients with hb>10g/dl (3).

4. The term ‘Critical Hematocrit’ has been derived from the critical oxygen delivery defining a threshold below which aerobic metabolism becomes directly supply-dependent. However, due to a variety of co-factors, especially cardiovascular disease, this value is different between patients, and cannot easily be assessed by established clinical monitoring tools. Thus, the decision to transfuse should not exclusively be based on a single ‘critical’ value, but rather on evaluation of several factors, such as hemodynamics and clinical judgement.

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METHICILLIN-RESISTANT STAPHYLOCOCCUS AUREUS (MRSA) IN NURSING HOMES: A DANGER FOR INTENSIVE CARE UNITS?

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Background and Goal of Study. Shifting population demographics with a growing segment of late middle-aged and elderly persons result in a trend toward older, sicker, and more complex patients in hospital wards and intensive care units (ICUs). Our goal is to evaluate the prevalence of nasal colonisation with Staphylococcus aureus (SA) and corresponding risk factors in community nursing homes in Innsbruck, Austria

Results and Discussion. We screened 623 residents (mean age 85.0±8.9 yr., male 17.2%) in five community nursing homes for nasal carriage of S. aureus. Among these residents 311 (49.9%) were colonised with S. aureus, 39 of them were MRSA (12.5%). We found significantly more male residents colonised with MRSA (male 20.0% vs. female 10.5%; p<0.05). Other risk factors were the presence of cardiovascular diseases (14.9% vs. 0.0%), diabetes (26.0% vs. 7.7%), bed sore (50.0% vs. 11.7%), a history of bacterial infection during the past two months (pulmonary 42.9%, urinary 27.8%, none 10.1%), or recent treatment at the university medical centre (18.6% vs. 10.5%). There was a linear correlation between the category of nursing intensity and MRSA-prevalence (A: 0.0%; B: 5.9%; C: 8.3%; D: 15.6%; E: 20.4%). Resistance of colonising MRSA to other antimicrobials: ciprofloxacine 100%, imipenem 91.7%, mupirocin 29.2%, cotrimoxazol 8.7%, fusidic acid and vancomycin 0%.

Conclusion. The prevalence of MRSA is higher in nursing homes than in average. It is pivotal to stop the spread of resistance by screening for and eradication of colonising MRSA in concert with hygienic measures.
resistance and may be of benefit to stabilize blood pressure during states of normal or low peripheral vascular resistance, e.g. systemic inflammatory response syndrome.

Although short-term therapy with catecholamines and PDE inhibitors is effective to temporarily treat and overcome reversible myocardial contractile dysfunction, e.g. myocardial stunning, long-term administration of these drugs has recently been linked to adverse cardiac outcomes, including increases in morbidity and mortality. As the underlying mechanism of catecholamine and PDE-inhibitor-mediated increase in mortality was related to increased intracellular CaMP and calcium levels, recently a new class of positive inotropic agents, calcium sensitizers, has been introduced into clinical practice. These drugs have been shown to increase myocardial contractility without altering intracellular calcium levels. The role and possible benefits calcium sensitizers in clinical practice will have to be evaluated in controlled trials.

THE CARDIOVASCULAR RISK-PATIENT

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Cardiovascular complications are the leading cause of postoperative morbidity and mortality. (1) Throughout the perioperative period not only oxygen demand may be increased by elevated sympathetic activity and changes in body temperature or pain, but also oxygen delivery may be decreased by hypovolemia, anaemia or depression of respiratory and cardiovascular function. Careful pre-operative evaluation and treatment as well as precise haemodynamic management may help to avoid critical situations. The surgical procedure should also be adapted to the perioperative risk of the individual patient. Furthermore, besides the avoidance of blood loss or hypothermia and besides consequent treatment of pain perioperative stress protection using beta-blockers, Ç-agonists or thoracic epidural anaesthesia has been shown to reduce the incidence of postoperative morbidity and mortality. (2)

In case of haemodynamic deterioration current therapy is directed to restoration and maintenance of normovolemia as well as adequate oxygenation as a first step. Pharmacological support may further help to stabilize the haemodynamic situation. According to the underlying pathophysiology treatment objectives should be an increase of cardiac contractility, a decrease of elevated systemic and/or pulmonary resistance and a reduction of pulmonary and/or systemic congestion. Additional monitoring may become necessary to closely observe the therapeutic strategies.

In case of pump failure due to myocardial ischemia the early use of a mechanical assist device like an intra-aortic balloon pump may be an effective measure for temporarily reversing cardiogenic shock. In patients who cannot be stabilized with these measures, emergency percutaneous transluminal coronary angioplasty (PTCA) should be immediately taken into consideration. (3)

References
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PRECLINICAL MANAGEMENT OF POLYTRAUMA

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Emergency medicine in Europe is primarily based on physicians acting in the field. This so-called ‘Stay and play’ European method has been controversially discussed and widely criticized, and cannot be corroborated by large studies showing improved outcome in emergency patients. Above all, this form of treatment of severely traumatized patients underscores the fundamentally different approach in polytrauma management between the USA and Europe. The American emergency system is largely based on primary vital stabilization by paramedics who prefer to rapidly transport a traumatized patient into a nearby hospital, more or less without substantial medical interventions. Conversely, European physicians are trained to perform immediate ‘life-saving’ procedures upon arrival on the emergency scene. Major points of criticism of this approach are: loss of time, increased loss of blood and coagulation factors, decrease of body temperature and a worse overall outcome. Therefore, even well-established interventions like intubation or volume resuscitation have been challenged by US authors. Several studies have stressed the potential difficulties of paramedics with intubation and induction of anaesthesia. Thus, it is not surprising that many authors and also the AHA do not recommend any distinct interventions in the prehospital setting. No large European multicenter studies are available on the outcome of polytrauma patients after interventions by well-trained and experienced emergency physicians like anaesthetists, but for these patients a rapidly initiated therapy focussing on vitaly stabilizing procedures like intubation or volume resuscitation may be very beneficial. Unlike paramedics, anaesthetists are not expected to have major troubles with intubation, anaesthesia induction, blood and fluid replacement or management of respiratory and circulatory failure. Thus, the solution may not be to ‘STAY and PLAY’ or ‘LOAD and GO’, but to ‘ACT rapidly and GO fast’.

References

REGIONAL ANESTHESIA IN CARDIAC SURGERY

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For a long time the application of regional anesthesia on patients undergoing major cardiac surgery has been avoided because of the potential risks (e.g. spinal hematoma, adverse hemodynamic effects) associated with its use. As a result, epidural anesthesia in combination with general anesthesia has only been applied by a few anesthesiologists in a few selected cases.

Finally after many years of nothing happening in this area activity and interest is rising.

First, we [1] as well as others (see below) show that epidural anesthesia can safely be applied in cardiac surgery if contraindications (e.g. preexisting coagulopathy, intake of antplatelet or thrombolytic drugs) are closely observed.

Second, recent data from animal and human studies give evidence that surgical stress response is attenuated [2], oxygen supply/demand ratio within ischemic myocardial areas and functional recovery from myocardial stunning is improved [3,4], coronary blood flow is favorably redistributed to the endocardium [5] new supraventricular arrhythmias and lower respiratory tract infections are diminished [6], tracheal extubation is facilitated and postoperative analgesia is improved [7].

Third, epidural anesthesia has now safely been used in conscious patients for cardiac revascularization [8,9,10] and aortic valve replacement [11].

We therefore conclude that regional anesthesia in combination with general anesthesia as well as regional anesthesia are safe alternatives to solely used general anesthesia for patients undergoing cardiac surgery if indications and contraindications are carefully checked.

References