Minimized Cardiopulmonary Bypass Techniques and Technologies.
Woodhead Publishing Series in Biomaterials

Description: Traditional cardiopulmonary bypass (CPB) techniques have suffered from a number of disadvantages including haemodilution, inflammation and post-operative bleeding. Minimised cardiopulmonary bypass techniques use developments in perfusion technology to significantly reduce foreign surface-blood interactions to make bypass simpler and safer. This important book reviews key developments and issues relating to this promising technology.

Part one covers the broad range of CPB pathophysiology, including anticoagulant protocols, the impact of CPB circuit surfaces, optimal haemodilution levels, and the important issue of CPB-induced systemic inflammatory response syndrome. Part two focuses on the issues of the new equipment developed for mini-CPB, optimal myocardial protection protocols and CPB perfusate options. Part three discusses clinical issues, including patient selection, coronary and valve surgery protocols and, among others, paediatric patients.

With its distinguished editors and international team of expert contributors, Minimized cardiopulmonary bypass techniques and technologies is a valuable reference for cardiac surgery teams and those researching this important technology.

- Covers a broad range of cardiopulmonary bypass (CPB) pathophysiology, including anticoagulant protocols, the impact of CPB circuit surfaces and optimal haemodilution levels.
- Focuses on new equipment specially developed for minimized-CPB and myocardial protection protocols.
- Discusses clinical issues, including patient selection.

Contents: Contributor contact details
Foreword
Chapter 1: Historical development of minimised cardiopulmonary bypass
Abstract:
1.1 Introduction and historical perspective
1.2 Cardiopulmonary bypass: from pioneering to refinement
1.3 Cardiopulmonary bypass: does size matter?
1.4 Conclusions
Chapter 2: Anticoagulation protocols for minimized cardiopulmonary bypass
Abstract:
2.1 Introduction: blood activation during cardiac surgery with cardiopulmonary bypass (CPB)
2.2 Anticoagulation during CPB: basic principles and historical notes
2.3 Heparin-bonded surfaces and other biocompatible treatments
2.4 Reduced systemic heparinization (RSH)
2.5 Contraindications
2.6 Future trends
Chapter 3: Minimized extracorporeal circulation: physiology and pathophysiology

Abstract:

3.1 Introduction: basic principles
3.2 The inflammatory cascade and biomarkers
3.3 Conclusions

Chapter 4: Blood-surface interface in miniaturised extracorporeal circulation systems

Abstract:

4.1 Introduction
4.2 Blood-surface contact in cardiopulmonary bypass (CPB)
4.3 Clinical benefits of miniaturised extracorporeal circulation systems

Chapter 5: Hemodilution: physiology and pathophysiology

Abstract:

5.1 Introduction
5.2 Basic physiology and pathophysiology of hemodilution
5.3 Microvascular alterations with hemodilution
5.4 Hemodilution and cardiopulmonary bypass (CPB)
5.5 Determinants of tissue oxygenation
    functional capillary density (FCD)
5.6 Conclusions

Chapter 6: Inflammatory response and minimized cardiopulmonary bypass

Abstract:

6.1 Introduction
6.2 Cardiopulmonary bypass (CPB)-induced inflammatory cascade
6.3 Pharmacological antioxidants for CPB: impact on biochemical and clinical outcomes
6.4 Minimized CPB circuits
6.5 Acknowledgements
6.7 Appendix: abbreviations

Chapter 7: Design and principles of the minimized extracorporeal circuit

Abstract:

7.1 Introduction
7.2 Basic principles of minimized extracorporeal circulation
7.2 Evolution of minimized circuits
7.4 Minimized extracorporeal systems currently available
7.5 Surgical applications of minimized extracorporeal circulation
7.6 Controversies and challenges facing minimized cardiopulmonary bypass
7.7 Future trends in minimized cardiopulmonary bypass

Chapter 8: Cardiopulmonary bypass perfusate
Abstract:
8.1 Introduction
8.2 Crystalloid primes
8.3 Types of crystalloids and colloid agents used in prime
8.4 Pharmacological agents used in prime
8.5 Using prime in CPB procedures
8.6 Examples of prime combinations
8.7 Minimizing the use of prime
8.8 Conclusions

Chapter 9: Myocardial preservation techniques for mini-bypass
Abstract:
9.1 Introduction
9.2 Methods of myocardial protection
9.3 Myocardial protection in mini-bypass
9.4 Conclusion

Chapter 10: Minimised cardiopulmonary bypass: objectives and indications
Abstract:
10.1 Introduction: objectives of minimised cardiopulmonary bypass
10.2 Indications and patient selection
10.3 Future trends

Chapter 11: Coronary artery bypass grafting (CABG)
Abstract:
11.1 Introduction
11.2 History of coronary artery bypass grafting (CABG)
11.3 Patient selection (indications) for mini-invasive cardiopulmonary bypass
11.4 Conduits
11.5 Anastomoses techniques
11.6 Surgical management on mini-invasive cardiopulmonary bypass
11.7 Conclusions

Chapter 12: Valve surgery using minimized perfusion circuits

Abstract:

12.1 Introduction
12.2 Surgical and technical aspects
12.3 Blood management and patient treatment in valve surgery
12.4 Experience with closed-loop perfusion circuits in valve surgery

Chapter 13: Minimising cardiopulmonary bypass in children

Abstract:

13.1 Introduction
13.2 Challenges of cardiopulmonary bypass (CPB) in the congenital patient
13.3 Potential goals of mini-CPB
13.4 Mini-CPB and neurological outcome
13.5 Mini-CPB circuit design options in congenital heart surgery
13.6 Clinical trials
13.7 Alternative procedures to CPB
13.8 Conclusions
13.10 Appendix: abbreviations

Chapter 14: Comparison of minimized circulation with off-pump coronary artery bypass (OPCAB) grafting and conventional surgery

Abstract:

14.1 Introduction
14.2 Controversies and challenges facing off-pump coronary artery bypass (OPCAB) grafting
14.3 Studies comparing OPCAB with mini-cardiopulmonary bypass (mini-CPB) and mini-CPB assisted OPCAB
14.4 Future trends and competition between OPCAB and minimized cardiopulmonary bypass

Chapter 15: Minimally invasive cardiac surgery, port-access and robotic surgery

Abstract:

15.1 Introduction
15.2 Minimally invasive coronary artery bypass grafting
15.3 Minimally invasive valve surgery
15.4 Minimally invasive congenital surgery
15.5 Minimally invasive treatment of atrial fibrillation
15.6 Miscellaneous possibilities of minimally invasive surgery
15.7 Robotic surgery
15.8 Conclusions

Index

Order by Fax - using the form below
Order by Post - print the order form below and send to
Research and Markets,
Guinness Centre,
Taylors Lane,
Dublin 8,
Ireland.
Fax Order Form
To place an order via fax simply print this form, fill in the information below and fax the completed form to 646-607-1907 (from USA) or +353-1-481-1716 (from Rest of World). If you have any questions please visit http://www.researchandmarkets.com/contact/

Order Information
Please verify that the product information is correct.

<table>
<thead>
<tr>
<th>Product Name:</th>
<th>Minimized Cardiopulmonary Bypass Techniques and Technologies. Woodhead Publishing Series in Biomaterials</th>
</tr>
</thead>
<tbody>
<tr>
<td>Web Address:</td>
<td><a href="http://www.researchandmarkets.com/reports/2719808/">http://www.researchandmarkets.com/reports/2719808/</a></td>
</tr>
<tr>
<td>Office Code:</td>
<td>SC</td>
</tr>
</tbody>
</table>

Product Format
Please select the product format and quantity you require:

| Quantity | Hard Copy (Hard Back): USD 214 + USD 31 Shipping/Handling |

* Shipping/Handling is only charged once per order.
* The price quoted above is only valid for 30 days. Please submit your order within that time frame to avail of this price as all prices are subject to change.

Contact Information
Please enter all the information below in BLOCK CAPITALS

<table>
<thead>
<tr>
<th>Title:</th>
<th>Mr ☐</th>
<th>Mrs ☐</th>
<th>Dr ☐</th>
<th>Miss ☐</th>
<th>Ms ☐</th>
<th>Prof ☐</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Name:</td>
<td></td>
<td></td>
<td></td>
<td>Last Name:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Email Address: *</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Job Title:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Organisation:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Address:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>City:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Postal / Zip Code:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Country:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Phone Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fax Number:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Please refrain from using free email accounts when ordering (e.g. Yahoo, Hotmail, AOL)
Payment Information

Please indicate the payment method you would like to use by selecting the appropriate box.

☐ Pay by credit card: You will receive an email with a link to a secure webpage to enter your credit card details.

☐ Pay by check: Please post the check, accompanied by this form, to:
Research and Markets,
Guinness Center,
Taylors Lane,
Dublin 8,
Ireland.

☐ Pay by Wire Transfer: Bank details will be provided on the invoice which you will receive after you place your order with us.

If you have a Marketing Code please enter it below:

Marketing Code: ____________________________

Please note that by ordering from Research and Markets you are agreeing to our Terms and Conditions at http://www.researchandmarkets.com/info/terms.asp

Please fax this form to:
(646) 607-1907 or (646) 964-6609 - From USA
+353-1-481-1716 or +353-1-653-1571 - From Rest of World