The OUTCOMES RESEARCH Group was formed in 1990 at the University of California in San Francisco and subsequently became an institute when the group's administrative center moved to the University of Louisville in March of 2000. In 2005, OUTCOMES RESEARCH became a department at the Cleveland Clinic. After 9 years, the Department of OUTCOMES RESEARCH now includes 65 members at the Clinic, among more than 190 academic investigators in twenty countries including the Austria, Canada, China, Ireland, Israel, Japan, China, and the United States. The Consortium is non-profit; its only goal is thus participation in high-quality research.

2015 year was the Consortium’s 25th Anniversary. This milestone was celebrated by an editorial in Anesthesiology by Henry Rosenberg (2015; 123:1233-4). It starts: “IMAGINE a research group made up of more than 100 members working both independently and collaboratively across many countries having no legal standing, no bank account, and loosely organized, but devoted to the goal of improving health care through the understanding of the results of health care practices. Furthermore, imagine that members of this organization have published more than 900 full journal articles since its inception and publish a new full paper every 5 days. [Since 2018, the Consortium has published a full paper every 3 days.] It may be hard to believe that such a unique organization exists, but it does. It is known as the OUTCOMES RESEARCH Consortium.”
The Consortium is currently involved in about 200 clinical studies, including many large multi-center outcome trials. Much of the Consortium’s funding is from the National Institutes of Health, the Canadian Institutes of Health Research, and other peer-reviewed granting agencies. We also collaborate with companies that make innovative devices and drugs, often conducting major trials that lead to regulatory certification. The Consortium facilitates scientific exchange and collaboration necessary for technically complex outcomes studies involving hundreds or thousands of patients. Additional information is available at www.OR.org.

Aspirations

Outcomes research seeks to understand the end results of particular health care practices and interventions. End results include effects that people experience and care about, such as change in the ability to function. In particular, for individuals with chronic conditions—where cure is not always possible—end results include quality of life as well as mortality. By linking the care people get to the outcomes they experience, outcomes research has become the key to developing better ways to monitor and improve the quality of care.

The general goal of the OUTCOMES RESEARCH Consortium is to evaluate inexpensive, low-risk interventions that are easy to implement yet likely to markedly improve outcome. For example, we have shown that simply maintaining intraoperative normothermia markedly reduces the risk of complications — and does so at trivial cost. A consequence of our work is that active intraoperative warming has become routine, whereas it was rare a decade ago.

Mission

Be the world’s leading anesthesia-related clinical research organization.

Behaviors

1. Publish more high-impact, peer-reviewed clinical research papers (quantified as number times impact) than any other anesthesia organization.

2. Recruit more extra-mural clinical research funding than any other anesthesia organization, with “clinical research” being defined as research conducted with human subjects.

3. Train clinical investigators at all levels.
# Personnel

## Administrative Structure

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Location</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>Director</td>
<td>Daniel I. Sessler, M.D.</td>
<td>Cleveland</td>
<td>USA</td>
</tr>
<tr>
<td>Associate Director</td>
<td>Alparslan Turan, M.D.</td>
<td>Cleveland</td>
<td>USA</td>
</tr>
<tr>
<td>2019 Site Directors</td>
<td>Donal Buggy, M.D.</td>
<td>Dublin</td>
<td>Ireland</td>
</tr>
<tr>
<td></td>
<td>Peter Szmuk, M.D.</td>
<td>Dallas</td>
<td>USA</td>
</tr>
<tr>
<td></td>
<td>Yuguang Huang, M.D.</td>
<td>Beijing</td>
<td>China</td>
</tr>
<tr>
<td></td>
<td>Thomas Volk, M.D.</td>
<td>Homburg</td>
<td>Germany</td>
</tr>
<tr>
<td></td>
<td>Colin</td>
<td>Royse</td>
<td></td>
</tr>
<tr>
<td></td>
<td>M.D.</td>
<td>Melbourne</td>
<td>Australia</td>
</tr>
<tr>
<td></td>
<td>M.D.</td>
<td>San Diego</td>
<td>USA</td>
</tr>
</tbody>
</table>

## Members

1. Alaa A. Abd-Elsayed, M.D. - Madison, USA
2. Basem B. Abdelmalak, M.D. - Cleveland, USA
3. Janet Adegbuyi, B.S. - Cleveland, USA
4. Ruben Agudelo Jimenez, M.D. - Cleveland, USA
5. Sanchit Ahuja, M.D. - Detroit, USA
6. Wael Ali Sakr Esa, M.D. - Cleveland, USA
7. Ece Yamak Altinbilkul, M.D. - Cleveland, Turkey
8. Sibs Anwar, M.D., Ph.D. - London, United Kingdom
9. Harendra Arora, M.D. - Chapel Hill, USA
10. Amanda Artis, M.S. - Cleveland, USA
11. Valentina Assenzo, M.D. - Suresnes, Paris, France
12. Abdul Kadir Atim, M.D. - Ankara, Turkey
13. Sabry Ayad, M.D. - Cleveland, USA
14. Rovnat Babazade, M.D. - Galveston, USA
15. Gausan Bajracharya, M.D. - Cleveland, USA
16. Omer Bakal, M.D. - Cleveland, USA
17. Allen Bashour, M.D. - Cleveland, USA
18. Beatrice Beck-Schimmer, MD - Zurich, Switzerland
19. Sergio D. Bergese, M.D. - Columbus, USA
20. Bruce M. Biccard, M.B.Ch.B., F.C.A., Ph.D. - Cape Town, South Africa
21. Peter Biro, M.D. - Zurich, Switzerland
22. Joshua A. Bloomstone, M.D., M.Sc - Glendale, USA
23. James M. Blum, M.D. - Decatur, USA
24. Hagen Bomberg, M.D. - Homburg, Germany
25. Mauro Bravo, M.D. - Cleveland, USA
26. Donal J. Buggy, M.D., FRCSI, FRCACSI, FRCA - Dublin, Ireland
27. Juan Cata, M.D. - Houston, USA
28. Praveen Chahar, M.D., F.C.A.R.C.S.I. - Cleveland, USA
29. Christine Chung, B.S. - Cleveland, USA
30. David Chelnick, B.S. - Cleveland, USA
31. Surendrasingh S. Chhabada, M.D. - Cleveland, USA
32. Andrew Chiu, B.S. - Cleveland, USA
33. Praneeta Chodavarapu, M.D. - Cincinnati, USA
34. Barak Cohen, M.D. - Cleveland, USA
35. Allen Collins - Cleveland, USA
36. Jennifer Cook - Cleveland, USA
37. Jacek B. Cywinski, M.D. - Cleveland, USA
38. Jarrod E. Dalton, Ph.D. - Cleveland, USA
39. Gildasio S. De Oliveira Jr., M.D., M.S.C.I. Providence USA
40. Stacie G. Deiner, M.D. New York USA
41. Jagan Devarajan, MD Cleveland USA
42. Philip J. Devereaux, M.D., Ph.D. Hamilton Canada
43. Anthony G. Doufas, M.D., Ph.D. Stanford USA
44. Lei Du, M.D. Chengdu China
45. Emmanuelle Duceppe, MD., Ph.D. Montreal Canada
46. Andrea E. Duncan, M.D. Cleveland USA
47. Ruthy Edry, M.D. Haifa Israel
48. Proshad N. Efune, M.D. Dallas USA
49. Catherine Ekladios, M.D. Cleveland USA
50. Hesham Elsharkawy, M.D. Cleveland USA
51. Hani Essbar, M.D. Cleveland USA
52. Tobis Ezri, M.D. Israel
53. Jonathan Fang, M.D. Cleveland USA
54. Ehab S.A. Farag, M.D., F.R.C.A. Cleveland USA
55. Tobias Fink, M.D. Homburg Germany
56. John J. Finneran IV, M.D. San Diego USA
57. Edith Fleischmann, M.D. Vienna Austria
58. Béla Fülesdi, M.D., Ph.D. Debrecen Hungary
59. Rodney A. Gabriel, M.D. La Jolla USA
60. Marcelo Gama de Abreu, M.D., Ph.D., D.E.S.A Dresden Germany
61. Ahmed Gharrash, M.D. Cleveland USA
62. Martin V. Grady, M.D. Mayfield Heights USA
63. Sarah Guirguis, M.D. Cleveland USA
64. Sven Halvorson, M.S. Cleveland USA
65. Hassan Hamadnalla, M.D. Cleveland USA
66. Cecelia Hanline, M.H.S. Cleveland USA
67. Manal Hassan, M.D. Mayfield Heights USA
68. Mohamed Hassan, M.D. Cleveland USA
69. Steve Hata, M.D., F.C.C.P., M.S.C. Cleveland USA
70. Yuguang Huang, M.D. Beijing China
71. Tobias Hüppe, M.D. Homburg (Saar) Germany
72. Brian M. Ilfeld, M.D., M.S. San Diego USA
73. Ilker Ince, M.D. Cleveland USA
74. Steven R. Insler, D.O. Cleveland USA
75. Daniela C. Ionescu, Ph.D., D.E.A.A. Cluj-Napoca Romania
76. Tadahiko Ishiyama, M.D., Ph.D. Chuo Japan
77. Pia Jaeger, M.D., Ph.D. Copenhagen Denmark
78. Jens-Ulrik S. Jensen, M.D., Ph.D. Copenhagen Denmark
79. Qiliang Jiang, M.D., Ph.D. Cleveland USA
80. Ruben A. Jiimenez, M.D. Cleveland USA
81. Barbara Kabon, M.D. Vienna Austria
82. Yusuke Kasuya, M.D. Tokyo Japan
83. Elliott Kavita Cleveland USA
84. Roop Kaw, M.D. Cleveland USA
85. Zafeer Khan, M.D. Cleveland USA
86. Ashish K. Khanna, M.D., F.C.C.P., F.C.C.M. Cleveland USA
87. Sandeep Khanna, M.D. Cleveland USA
88. Dilara Khoshknabi, M.D. Cleveland USA
89. Daniel Kim, M.D. Cleveland USA
90. Oliver Kimberger, M.D. Vienna Austria
91. Ryu Komatsu, M.D. Baltimore USA
92. Sascha Kreuer, M.D. Homburg Germany
93. Priya A. Kumar, M.D. Chapel Hill USA
96. Andrea M. Kurz, M.D.  Cleveland  USA
97. Giovanni Landoni, M.D.  Milan  Italy
98. Kate Leslie, M.D., F.A.N.Z.C.A.  Parkville  Australia
99. Kai Li, M.D., Ph.D.  Cleveland  USA
100. Qian Li, M.D.  Chengdu  China
101. Chen Liang, M.S.  Cleveland  USA
102. Jing Lin, M.D.  Changdu  China
103. Liu Liu, M.A.  Cleveland  USA
104. Ngai Liu, M.D., Ph.D.  Suresnes  France
105. Vladimir V. Lomivorotov, M.D., Ph.D.  Novosibirsk  Russia
106. Dominik Lorenz, M.D.  Homburg / Saar  Germany
107. Chao Ma, M.S.  Cleveland  USA
108. Anthony T. Machi, M.D.  Dallas  USA
109. Kamal Maheshwari, M.D.  Cleveland  USA
110. Natalya Makarova, M.S.  Cleveland  USA
111. Guangmei Mao, M.S.  Cleveland  USA
112. Edward J. Mascha, Ph.D.  Cleveland  USA
113. Takashi Matsukawa, M.D.  Chuo  Japan
114. Felix Maurer, B.S.  Homburg  Germany
115. Dianna Mehanny, M.D.  Cleveland  USA
116. Miluska Mejia, M.D.  Cleveland  USA
117. Mark Mettler  Cleveland  USA
118. Scott A. Miller, M.D.  Winston Salem  USA
119. Paul Minko  Cleveland  USA
120. Toshiki Mizobe, M.D., Ph.D.  Kyoto  Japan
121. Louretta Mosteller, B.A.  Cleveland  USA
122. Eassen Mu, M.D.  Beijing  China
123. Lukas M. Müller-Wirtz, M.D.  Homburg  Germany
124. Yasuko Nagasaka, M.D., Ph.D.  Tokyo  Japan
125. Yasufumi Nakajima, M.D., Ph.D.  Hirakata  Japan
126. Amanda Naylor, B.A.  Chicago  USA
127. Tyng Yan Ng, M.B.B.S.  Kuala Lumpur  Malaysia
128. Karen K. Ng-Wong, M.D.  Cleveland  USA
129. Azfar Niazi, M.D.  Cleveland  USA
130. Tara Nutcharoen, M.S.  Cleveland  USA
132. Dettlef E.R. Obal, M.D., Ph.D., D.E.S.A.  Palo Alto  USA
133. Ibrahim Onal, M.D.  Cleveland  USA
134. Makoto Ozaki, M.D., Ph.D.  Tokyo  Japan
135. Matt A. Pappas, M.D., M.P.H.  Cleveland  USA
136. Marie-Odile Parat, Pharm.D., Ph.D.  Woolloongabba  Australia
137. Fabio R. Patarroyo, M.D.  Cleveland  USA
138. Lijian Pei, M.D.  Beijing  China
139. Silvia E. Perez-Protto, M.D., M.S.  Cleveland  USA
140. Reuven Pizov, M.D.  Haifa  Israel
141. Olga M. Plattner, M.D.  Vienna  Austria
142. Kanhaiya Poddar, M.D.  Cleveland  USA
143. Attila Podolyak, M.D.  Cleveland  USA
144. Xuan Pu, M.S.  Cleveland  USA
145. Yeweit Qiu, M.D.  Cleveland  USA
146. Shobana Rajan, M.D.  Cleveland  USA
147. Eva Rivas Ferreira, M.D.  Cleveland  USA
148. Efrain Riveros-Perez, M.D.  Augusta  USA
150. Colin Royse, M.D.  Melbourne  Australia
151. Kurt Ruetzler, M.D.  Cleveland  USA
152. Remie Saab, M.D.  Cleveland  USA
Outcomes Research Consortium

153. Leif Saager, M.D.  
154. Wael Saasouh, M.D.  
155. Partha Saha, M.D.  
156. Ogena Saied  
157. Ahmed Salih, M.D.  
158. Vafi Salmasi, M.D.  
159. Bernd Saugel, M.D. E.D.I.C.  
160. Yehoshua-Nadav Schacham, M.D.  
162. Daniel I. Sessler, M.D.  
163. Tetsuya Shimada, M.D.  
164. Akhil K. Singh, M.B.B.S., M.D.  
165. Alexis Skolaris  
166. Abraham Sonny, M.D.  
167. Jeff W. Steiner, D.O.  
168. Matthew W. Swisher, M.D., M.S.  
169. Wojciech Szczeklik, M.D., Ph.D.  
170. Peter Szmuk, M.D.  
171. Marianne Tanios, M.D.  
172. Abdullah S. Terkawi, M.D.  
173. Uchida Tokujiro, M.D., Ph.D.  
174. David Torres, M.D.  
175. Alparslan Turan, M.D.  
176. Tamás Végh, M.D., Ph.D.  
177. Andrew Volio, D.O.  
178. Thomas Volk, M.D.  
179. Anupama Wadhwa, M.D.  
180. Michael Walters  
181. Catherine I. Wang, M.D.  
182. Dong-Xin Wang, M.D., Ph.D.  
183. Iris Wang, MD  
184. Jason Wu, M.D.  
185. Lexie Xu, M.D.  
186. Esra K. Yulein, M.D.  
187. Dongsheng Yang, M.S.  
188. Jean-Pierre Yared, M.D.  
189. Oguz Yilmaz, M.D.  
190. Hai Yu, M.D.  
191. Kan Zhang, M.D.  
192. Xiaobao Zhang, M.D.  

Research Fellows

<table>
<thead>
<tr>
<th>Name</th>
<th>Origin</th>
<th>Dates</th>
<th>Subsequent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Eva Rivas, M.D.</td>
<td>Spain</td>
<td>2017-</td>
<td></td>
</tr>
<tr>
<td>2. Marianne Tanios, M.D.</td>
<td>Egypt</td>
<td>2017-19</td>
<td></td>
</tr>
<tr>
<td>3. Dilara Khoshknabi, M.D.</td>
<td>Azerbaijan</td>
<td>2017-</td>
<td></td>
</tr>
<tr>
<td>4. Remie Saab, M.D.</td>
<td>Lebanon</td>
<td>2017-</td>
<td></td>
</tr>
<tr>
<td>5. Hani Essbar, M.D.</td>
<td>Syria</td>
<td>2017-</td>
<td></td>
</tr>
<tr>
<td>6. Ilker Ince, M.D.</td>
<td>Turkey</td>
<td>2018-19</td>
<td>Associate Prof, Ataturk University</td>
</tr>
<tr>
<td>7. Ahmed Salih, M.D.</td>
<td>Iraq</td>
<td>2018-</td>
<td></td>
</tr>
<tr>
<td>8. Jonathan Fang, M.D.</td>
<td>USA</td>
<td>2018-</td>
<td></td>
</tr>
<tr>
<td>9. Hassan Hamadnalla, M.D.</td>
<td>Egypt</td>
<td>2018-</td>
<td></td>
</tr>
<tr>
<td>10. Mohamad Hassan, M.D.</td>
<td>Egypt</td>
<td>2018-</td>
<td></td>
</tr>
<tr>
<td>11. Yuwei Qiu, M.D.</td>
<td>China</td>
<td>2018-19</td>
<td>Faculty, Shanghai Chest Hospital</td>
</tr>
<tr>
<td>12. Tetsuya Shimada, M.D.</td>
<td>Japan</td>
<td>2018-19</td>
<td>Faculty, National Defense Medical College</td>
</tr>
</tbody>
</table>
Outcomes Research Consortium

13. Mauro Bravo, M.D. Venezuela 2018-
14. Qiliang Jiang, M.D. China 2019 Faculty, Shanghai Chest Hospital
15. Omar Bakal, M.D. Turkey 2019-
16. Ece Yamak Altipulluk, M.D. Turkey 2019-
17. Xiaobao Zhang, M.D. China 2019
18. Andrew Volio, D.O. United States 2019-
19. Ahmed Al Gharrash, M.D. Saudi Arabia 2019-
20. Ruben Agudelo Jimenez, M.D. Colombia 2019-
21. Kai Li, M.D. China 2019-
22. Esra Kutlu Yalcin, M.D. Turkey 2019-
23. Fabio Rodriguez Patarryo, M.D. Colombia 2019-
24. Ibrahim Onal, M.D. Turkey 2019-
25. Jiayi Wang, M.D. China 2019-
26. Daniel Kim, M.D. USA 2019-

Graduate and Medical Students (full year)

<table>
<thead>
<tr>
<th>Name</th>
<th>Origin</th>
<th>Dates</th>
<th>Subsequent Position</th>
</tr>
</thead>
<tbody>
<tr>
<td>Paul Minko, B.S.</td>
<td>USA</td>
<td>2017-19</td>
<td>LECOM, Masters in Medical Science</td>
</tr>
<tr>
<td>Janet Adegboye, B.S.</td>
<td>USA</td>
<td>2018-19</td>
<td>Cleveland Clinic Lerner College of Medicine</td>
</tr>
<tr>
<td>Assad Ali, B.S.</td>
<td>USA</td>
<td>2017-19</td>
<td>NSU College of Osteopathic Medicine</td>
</tr>
<tr>
<td>Kavita Elliott, B.S.</td>
<td>USA</td>
<td>2017-19</td>
<td>Coordinator, Digestive Disease Institute</td>
</tr>
<tr>
<td>CeCelia Hanline, M.H.S.</td>
<td>USA</td>
<td>2017-19</td>
<td>Ohio Univ School of Osteopathic Medicine</td>
</tr>
<tr>
<td>Yousuf Raza, B.S.</td>
<td>Pakistan</td>
<td>2017-19</td>
<td>Digestive Diseases, Cleveland Clinic</td>
</tr>
<tr>
<td>David Chelnick, B.S.</td>
<td>USA</td>
<td>2017-</td>
<td></td>
</tr>
<tr>
<td>Adam Hochman, M.S.</td>
<td>USA</td>
<td>2018-19</td>
<td>Medial College of South Carolina</td>
</tr>
<tr>
<td>Lauretta Mosteller, B.A.</td>
<td>USA</td>
<td>2018-19</td>
<td></td>
</tr>
<tr>
<td>Andrew Chiu, B.S.</td>
<td>USA</td>
<td>2019-</td>
<td></td>
</tr>
<tr>
<td>Sofiya Lozovskiy, B.S.</td>
<td>USA</td>
<td>2019-</td>
<td></td>
</tr>
<tr>
<td>Aratara Nutcharoen, B.S.</td>
<td>USA</td>
<td>2019-</td>
<td></td>
</tr>
<tr>
<td>Alexis Skolaris, B.S.</td>
<td>USA</td>
<td>2019-</td>
<td></td>
</tr>
</tbody>
</table>

Honors and Awards

<table>
<thead>
<tr>
<th>Name</th>
<th>Honor</th>
<th>Organization</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barak Cohen</td>
<td>2nd Place, Resident Essay Contest</td>
<td>American Society of Anesthesiologists</td>
</tr>
<tr>
<td>Wael Saasouh</td>
<td>Merit Award</td>
<td>Detroit Medical Center</td>
</tr>
<tr>
<td>Chetan Lokhande</td>
<td>Best Resident</td>
<td>Cleveland Clinic, Fairview</td>
</tr>
<tr>
<td>Hassan Hamadnalla</td>
<td>Best Case Report</td>
<td>Ohio Society of Anesthesia</td>
</tr>
<tr>
<td>Daniel Sessler</td>
<td>Researcher of the Year</td>
<td>Perioperative Care Congress</td>
</tr>
<tr>
<td>Basem Abdelmalak</td>
<td>Elected president</td>
<td>Society for Ambulatory Anesthesia</td>
</tr>
</tbody>
</table>

Consortium Research Awards

The Gladys Sessler Prize is an endowed award that is given yearly. All research fellows and junior faculty members of the OUTCOMES RESEARCH Consortium are eligible. This year’s award was to Kurt Ruetzler.
The **Best Fellow Award** is given to the Department of OUTCOMES RESEARCH fellow who is voted by the faculty to have performed at the very highest level. This year’s award was given to **Barak Cohen**.

### Publications

**Contribution to the world’s literature**

An article by Pagel and Hudetz (BMC Anesthesiology 12:5, 2012) evaluated anesthesia publication trends. In 2010, the last year they report, there were 665 clinical research articles published in the most influential anesthesia journals: Anesthesiology, the *British Journal of Anaesthesia*, *Anesthesia & Analgesia*, *Anaesthesia* and the *European Journal of Anaesthesia*. Last year, the Consortium published 30 papers in the 14 journals they considered. The Outcomes Research Consortium thus publishes more than 4% of the clinical research in high-profile general anesthesia journals. Of note, the Consortium also publishes nearly as many papers in specialty journals ranging from pain to critical care to neuroscience, and in major multi-specialty journals. **Overall, the Consortium publishes a full paper or editorial nearly every 3 days.**

Since inception, the Consortium has published 1,400 full papers.

**Featured on journal covers this year**

![Journal Covers](image-url)
This year’s featured paper


**Background:** Three perioperative factors impair host defense against recurrence during cancer surgery: the surgical stress response, volatile anaesthesia, and opioids. All are ameliorated by regional anaesthesia-analgesia. We tested the primary hypothesis that recurrence after potentially curative breast cancer surgery is lower with paravertebral/propofol than sevoflurane/opioid anaesthesia. Secondarily, we tested the hypothesis that paravertebral analgesia reduces persistent incision pain.

**Methods:** Women having potentially curative primary breast cancer resections were randomized to either paravertebral and propofol anaesthesia or sevoflurane-opioid volatile anaesthesia. The primary outcome was local or metastatic breast cancer recurrence. The secondary outcomes were incisional pain at six and twelve months. Primary analyses were intent-to-treat.

**Findings:** The study was stopped after crossing a pre-planned futility boundary with 213 cancer recurrence events (61% of the maximum required number of recurrences) observed in 2108 women of whom 59% were from China. There was good baseline balance between randomized groups; median [25-75%] follow-up was 36 [24-49] months. There were 102 (9.8%) recurrences among 1043 women assigned to paravertebral anaesthesia versus 111 (10.4%) among 1065 women who received sevoflurane anaesthesia. The hazard ratio for cancer recurrence in paravertebral versus general anaesthesia was an estimated 0.97 (0.74, 1.3), P=0.84. About half the patients in each group reported some pain at six months, and about a quarter reported pain at 12 months. The incidence of neuropathic breast pain was 10% at 6 months and 7% at 12 months in each group, and did not differ by anaesthetic technique.

**Interpretation:** Paravertebral-propofol anaesthesia did not reduce breast cancer recurrence after potentially curative surgery compared with sevoflurane-opioid anaesthesia in our patients. The incidence and severity of persistent incisional breast pain was unaffected by anaesthetic technique. ClinicalTrials.gov (NCT00418457).
Published Full Papers and editorials

1. Abdelmalak B: The case against preoperative endoscopic airway examination (PEAE) in the “ENT airway” (editorial). Journal of Head & Neck Anesthesia 2019; 3


44. İnce İ, Ozcimen E, Turan A: Meta-analysis: A review article. JARSS 2019; 27: 1-8


47. Kabon B, Sessler DI, Kurz A, Crystalloid-Colloid Study Team: Effect of intraoperative goal-directed balanced crystalloid versus colloid administration on major postoperative morbidity: A randomized trial. Anesthesiology 2019; 130: 728-44


85. Saugel B, Khanna AK: Managing hemodynamic instability - If you want to know cardiac output, you need to measure it! (editorial). J Crit Care 2019; 49: 185-6


91. Sessler DI, Riedel B: Anesthesia and cancer recurrence: Context for divergent study outcomes (editorial). Anesthesiology 2019; 130: 3-5

92. Sessler DI, Saugel B: Beyond 'failure to rescue': the time has come for continuous ward monitoring. Br J Anaesth 2019; 122: 304-6


Book Chapters