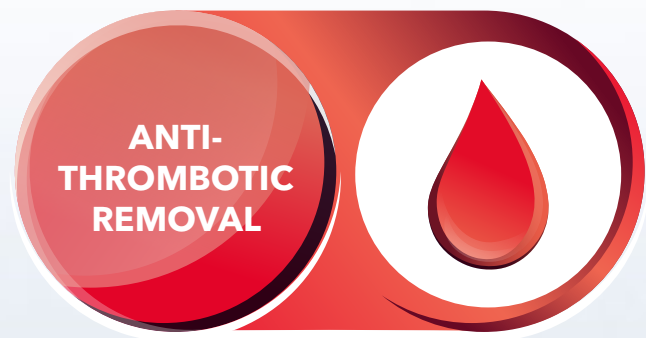



## Clinical Evidence for CytoSorb® Therapy in Antithrombotic Removal

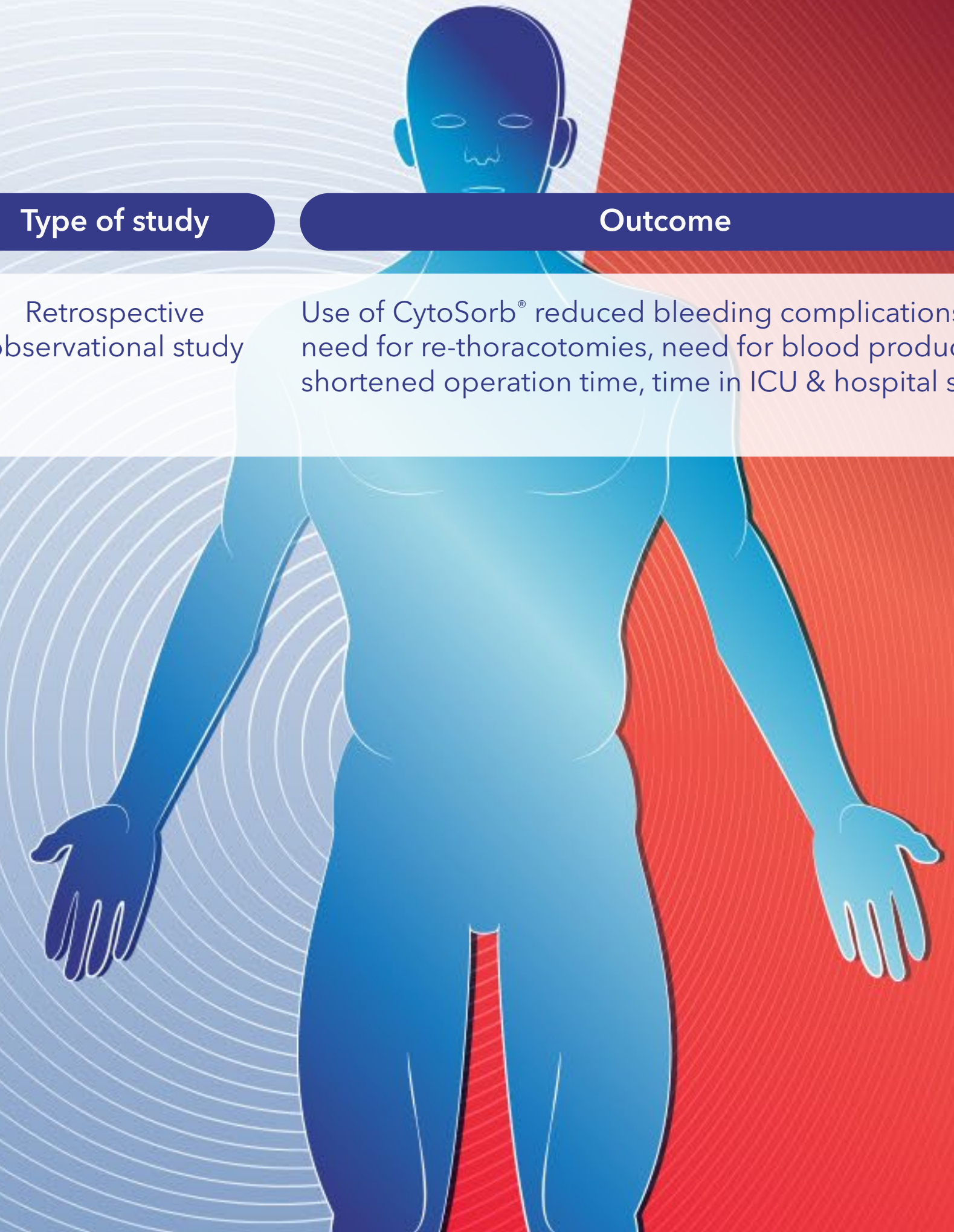
Name	Title	Aim	Number of patients	Type of study	Outcome
<a href="#">Hassan et al., JTCVS Open 2023; epub</a>	Intraoperative ticagrelor removal via hemoadsorption during on-pump coronary artery bypass grafting	Three centre study prospectively enrolling pts on ticagrelor requiring urgent coronary artery bypass graft surgery, measuring ticagrelor levels before and after CytoSorb® was used via integration into the cardiopulmonary bypass machine.	11	Multicentre case series	This is the first in vivo report showing that the intraoperative use of CytoSorb® can efficiently remove ticagrelor and significantly reduce circulating drug levels thus potentially helping to reduce serious postoperative bleeding.
<a href="#">Kietaihl et al., EJA 2023; 40(4):226-304</a>	Management of severe peri-operative bleeding: Guidelines from the European Society of Anaesthesiology and Intensive Care: Second update 2022	Update on 2017 guidelines on perioperative bleeding including recommendations on the management of intra- and postoperative bleeding in patients undergoing cardiac surgery.	N/A	Guidelines	"In patients on ticagrelor or rivaroxaban undergoing emergency cardiac/aortic surgery on CPB, haemoadsorption may be considered as an adjuvant therapy to reduce bleeding complications"
<a href="#">Hassan et al., Annals of Thoracic and Cardiovascular Surgery 2022; 28(3):186-192</a>	Hemoadsorption of Rivaroxaban and Ticagrelor during acute type A aortic dissection operations.	Compare use of CytoSorb® used for removal of ticagrelor or rivaroxaban during emergency surgery for acute type A aortic dissections with historical control patients.	10 versus 11	Retrospective Cohort Study	CytoSorb® group had a significantly shorter operation time, postop 24-hour drainage volume was significantly lower and there were no re-thoracotomies (compared to two [18.9%] among historical controls). The control group also required significantly more platelet transfusions.
<a href="#">Javanbakht et al., Pharmcoecon Open 2020; 4(2): 307 - 19</a>	Ticagrelor removal by CytoSorb® in patients requiring emergent or urgent cardiac surgery: A UK-based cost-utility analysis.	Evaluate the cost utility of intraoperative removal of ticagrelor using CytoSorb® versus usual care among patients requiring emergent or urgent cardiac surgery in the UK.	N/A	De novo analytic model	CytoSorb® as an intraoperative intervention for patients receiving ticagrelor undergoing emergent or urgent cardiac surgery is a cost-saving strategy, yielding improvement in perioperative and postoperative outcomes and decreased health resource use.





## Clinical Evidence for CytoSorb® Therapy in Antithrombotic Removal

Name	Title	Aim	Number of patients	Type of study	Outcome
 Hassan et al., <b>Ann Thorac Surg</b> 2019; 108(1): 45 - 51	CytoSorb® adsorption during emergency cardiac operations in patients at high risk of bleeding.	Compare clinical outcomes in emergency open heart surgery, patients on Ticagrelor or Rivaroxaban with or without CytoSorb®.	55	Retrospective observational study	Use of CytoSorb® reduced bleeding complications, need for re-thoracotomies, need for blood products, shortened operation time, time in ICU & hospital stay.



### CytoSorbents Europe GmbH

Müggelseedamm 131  
12587 Berlin | Germany

T +49 30 65 49 91 45  
F +49 30 65 49 91 46  
support@cytosorbents.com

Register for the literature newsletter

Visit our literature database for an overview of all references



[www.cytosorb.com](http://www.cytosorb.com)

The clinical and preclinical data and results obtained with the CytoSorb® adsorber are not transferable to other products. CytoSorb® should only be administered by health care professionals, properly trained in administration of extracorporeal therapies. The statements here represent the personal opinions and views of the author(s) only and do not necessarily reflect accepted medical knowledge in general or indications covered by the intended use of CytoSorb®. CytoSorb® and CytoSorbents are trademarks of the CytoSorbents Corporation, USA. © Copyright 2023, CytoSorbents Europe GmbH. All rights reserved. B1291R03ENG2023

Jul 2023