



Rachad Zayat, MD, PhD

Associate Professor

Consultant Cardiothoracic Surgeon

PROFESSIONAL SUMMARY

Board-certified German specialist (Facharzt) in heart and thoracic surgery, possessing 12 years of operating room experience. I have proficiency in all facets of cardiothoracic surgery, including coronary artery bypass grafting (CABG), valve repair and replacement, pacemaker installation, mediastinoscopy, minimally invasive thoracic surgery (VATS), and robotic thoracic surgery. I possess a flourishing medical practice and have garnered significant professional accolades. In the past two years, I have conducted over 450 cardiothoracic procedures and acted as a lecturer at RWTH University Aachen Medical School. My advanced professional competence and dedication to favorable patient outcomes have yielded outstanding results. I am a cardiothoracic surgeon with over 100 TAVR procedures to my credit, specializing in the innovative ultrasound catheter-based therapy of acute pulmonary embolism, known as EKOS lyse. My areas of expertise include extracorporeal life support (ECMO), heart failure, and long-term mechanical support (LVAD). I possess board certification in transthoracic echocardiography from the European Association of Cardiovascular Imaging (EACVI).



r.zayat@gmail.com



+491747094715

Trier, 54290 Germany



EDUCATION

PhD: Cardiac Surgery
**RWTH University,
Medical Faculty,**
Aachen, Germany,
September 2019

- Thesis:
Hemocompatibility-related adverse events after the implantation of left ventricular assist devices using the HeartMate II as an example

M.D.: Cardiac Surgery

RWTH University

Hospital, Aachen,
Germany, May 2016

- Dissertation: **Does percutaneous dilatational tracheostomy increase the incidence of sternal wound infection - a single center retrospective of 4100 cases**

German State
Examination For
Medicine Human
Medicine

C.A.U University of Kiel,
Kiel, Germany,
September 2011


High School Diploma


American-College
Aleppo, Aleppo-Syria,
August 2003

LANGUAGES

English C1

Advanced

German

Bilingual or Proficient
(C2)

Arabic

Bilingual or Proficient
(C2)

SKILLS

- Video assisted thoracic surgery (VATS) (> 450)
- TAVR procedures (>100)
- ECMO Implantation and Management (>400)
- CABG surgery (>150)
- Ultrasound-assisted catheter-directed thrombolysis for acute pulmonary embolism (EKOS-lysis) (150)
- Heart failure surgery: Left Ventricular Assist device implantation (40)
- pre-and post-operative treatment of LVAD patients (>300)
- minimally-invasive heart valve surgery (75)
- Robotic Thoracic surgery (45)
- Pacemaker Implantation (>400)
- Cardiac ICU care
- Post-operative care
- Total artificial Heart CARMAT impl. (1)
- OR Management
- Open Thoracic surgery (>200)

WORK HISTORY

October 2023 - current

Heart Centre Trier, Barmherzigen Brueder Hospital **Consutant cardiothoracic surgeon, Head of the mechanical cirruclatory support program**

- Performed with Prof. Haneya the first in man in Rheinland-Pflaz Total artificial Heart CARMAT® implantation in Germany
- Performed numerous cardiac, thoracic and TAVR surgeries to improve patient medical outcomes.
- Focus on minimally invasive trans-axillary aortic valve replacement
- Build the Robotic Thoracic surgery program (>30 procedures)
- Gained expertise in endoscopic mitral valve repair
- Expanded my experience in oncological thoracic surgery

July 2020 - September 2023

RWTH University Hospital - Consultant Thoracic Surgeon, Aachen, Germany

- Performed numerous cardiac, thoracic and TAVR surgeries to improve patient medical outcomes.
- VA- and VV-ECMO Implantation and management

- Performed numerous interventional treatments of acute pulmonary embolism (EKOS-Lyse)
- Completed valve replacement and aneurysm repair surgeries to correct cardiac system malfunctions.
- Performed numerous VATS procedures
- Performed numerous CABG procedures
- Short and long-term mechanical support
- performed the echocardiography studies pre-, intra- and postoperatively of patients with end-stage heart failure, who received LVAD or ECMOs
- Performed emergency surgeries like Hemothorax, pericardial tamponade, acute coronary syndrome, cardiogenic shock, ARDS
- Monitored post-surgical treatment in the ICU to promote patient recovery and enhanced health.
- Published articles in international peer-reviewed journals and presented academic papers at international congress to relate information on surgical challenges, techniques and outcomes.
- Conducted medical research on various diseases and methods of treatment.
- Made informed decisions of therapeutic intervention based on patient information and preferences, up-to-date scientific evidence, and clinical judgment.
- Monitored patient health condition after surgery by coordinating follow-up meetings with the patient.
- Supervised trainees, medical students, residents and fellows to help each achieve proficiency in the field.
- Collaborated with other medical professionals to check patient wishes and care.

October 2012 - January 2020

RWTH University Hospital Aachen - Cardiac Surgery Residency, Aachen, Germany

- Assisted in numerous cardiac, thoracic and TAVR surgeries
- Performed under supervision numerous cardiac, thoracic and TAVR surgeries to improve patient medical outcomes.
- Operated during the last years of my residency as first surgeon

(100 CABG+ 50 valve surgery+ 50 VATS + 10 LVAD)

CERTIFICATIONS

- German Board (Facharzt) Cardiac Surgery January 2020
- German Board (Facharzt) Thoracic Surgery August 2022
- Certification in invasive Therapy for cardiac and pulmonary insufficiency “Extracorporeal circulatory support and VAD” from the German Society of cardiac, thoracic and vascular surgery (DGTHG) February 2023
- Certification in Catheter-Based Heart Valve Therapy (TAVI) from the German Society of cardiac, thoracic, and vascular surgery (DGTHG) February 2023
- Certification from the European Association of Cardiovascular Imaging (EACVI) in Transthoracic Echocardiography, 2015 and Re-certified 2021
- Certification of the Federation of European Laboratory Animal Science Associations (FELASA-B) 2016
- Certified Good Clinical Practice Investigator Physician for AMG-Studies - 2014

A handwritten signature in blue ink, appearing to read 'R. Taylor', is positioned to the right of the list of certifications.

PUBLICATIONS

1. Schnoering, L., Khattab, M. A., Akhyari, P., Moza, A., Haneya, A., Diab, A. H., Abugameh, A., Lotfi, S., & **Zayat, R.** (2024). Pressure-dimension index and left ventricular sphericity index following HeartMate II and HeartMate 3 implantation. *ESC heart failure*, 10.1002/ehf2.14839. Advance online publication. <https://doi.org/10.1002/ehf2.14839>
2. Billig, S., **Zayat, R.**, Yelenski, S., Nix, C., Bennek-Schoepping, E., Hochhausen, N., & Derwall, M. (2024). The Self-Expandable Impella CP (ECP) as a Mechanical Resuscitation Device. *Bioengineering (Basel, Switzerland)*, 11(5), 456. <https://doi.org/10.3390/bioengineering11050456>
3. Durak, K., Nubbemeyer, K., **Zayat, R.**, Spillner, J., Dineva, S., Kalverkamp, S., & Kersten, A. (2024). De Ritis Ratio to Predict Clinical Outcomes of Intermediate- and High-Risk Pulmonary Embolisms. *Journal of clinical medicine*, 13(7), 2104. <https://doi.org/10.3390/jcm13072104>
4. Doukas, P., Dalibor, N., Keszei, A., Frankort, J., Krabbe, J., **Zayat, R.**, Jacobs, M. J., Gombert, A., Akhyari, P., & Mehdiani, A. (2024). Factors Associated with Early Mortality in Acute Type A Aortic Dissection-A Single-Centre Experience. *Journal of clinical medicine*, 13(4), 1023. <https://doi.org/10.3390/jcm13041023>
5. Kolashov, A., Lotfi, S., Spillner, J., Shoaib, M., Almaghrabi, S., Hatam, N., Haneya, A., **Zayat, R.**, & Khattab, M. A. (2024). Evaluation of myocardial work changes after lung resection-the significance of surgical approach: an echocardiographic comparison between VATS and thoracotomy. *General thoracic and cardiovascular surgery*, 72(8), 542–550. <https://doi.org/10.1007/s11748-023-02005-7>
6. Hill A, Bergmann D, Schulte J, **Zayat R**, Marx G, Simon TP, Mossanen J, Brücken A, Stoppe C. Proenkephalin A and bioactive adrenomedullin are useful for risk prognostication in cardiac surgery. *Front Cardiovasc Med.* 2023 Jan 23;9:1017867. doi: 10.3389/fcvm.2022.1017867. PMID: 36756642; PMCID: PMC9900105.
7. Ahmad U, Khattab MA, Schaelte G, Goetzenich A, Foldenauer AC, Moza A, Tewarie L, Stoppe C, Autschbach R, Schnoering H, **Zayat R**. Combining Minimally Invasive Surgery With Ultra-Fast-Track Anesthesia in HeartMate 3 Patients: A Pilot Study. *Circ Heart Fail.* 2022May;15(5):e008358.doi:10.1161/CIRCHEARTFAILURE.121.00838. Epub 2022 Mar 7. PMID:35249368.
8. Raasveld SJ, Taccone FS, Broman LM, Hermans G, Meersseman P, Quintana Diaz M, Delnoij TSR, van de Poll M, Gouvea Bogossian E, van Baarle FLF, Durak K, **Zayat R**, Oude Lansink-Hartgring A, Meuwese CL, van der Heijden JJ, de Troy E, Dauwe D, Scholten E, van der Velde F, Maas JJ, Dos Reis Miranda D, Kuijpers M, van den Brule J, van den Bergh WM, Vlaar APJ. Outcomes of Extracorporeal Membrane Oxygenation in COVID-19-Induced Acute Respiratory Distress Syndrome: An Inverse Probability Weighted Analysis. *Crit Care Explor.* 2022 Oct 7;4(10):e0770.

9. Durak K, Kalverkamp S, **Zayat R**, Alizai PH, Spillner J, Kersten A. Emergency colectomy during mechanical circulatory support for septic cardiomyopathy. *JTCVS Tech.* 2022 Jun 20;14:122-124. doi: 10.1016/j.jtc.2022.06.004. PMID: 35967195; PMCID: PMC9367201.
10. Laaf E, Benstoem C, Rossaint R, Wendt S, Fitzner C, Moza A, **Zayat R**, Hill A, Heyland DK, Schomburg L, Goetzenich A, Stoppe C. High- dose supplementation of selenium in left ventricular assist device implant surgery: A double-blinded, randomized controlled pilot trial. *JPEN J Parenter Enteral Nutr.* 2022 Aug;46(6):1412-1419. doi: 10.1002/jpen.2309. Epub 2022 Jan 5. PMID: 34859459.
11. Drosos V, Durak K, Autschbach R, Spillner J, Nubbemeyer K, **Zayat R***, Kalverkamp S*. Video-Assisted Thoracoscopic Surgery Management of Subacute Retained Blood Syndrome after Cardiac Surgery. *Ann Thorac Cardiovasc Surg.* 2022 Apr 20;28(2):146-153. doi: 10.5761/atcs.0a.21-00102. Epub 2021 Oct 23. PMID: 34690218; PMCID: PMC9081459
12. Mohammed AFA, Frick M, Kerst G, Hatam N, Elgamal MF, Essa KM, Hövels-Gürich HH, Vazquez-Jimenez JF, **Zayat R**. Proximal Aortic Dilatation and Pulmonary Valve Replacement in Patients with Repaired Tetralogy of Fallot: Is There a Relationship? A Cardiac Magnetic Resonance Imaging Study. *J Clin Med.* 2021 Nov 15;10(22):5296. doi: 10.3390/jcm10225296. PMID: 34830578; PMCID: PMC8625773.
13. **Zayat R**, Kalverkamp S, Grottke O, Durak K, Dreher M, Autschbach R, Marx G, Marx N, Spillner J, Kersten A. Role of extracorporeal membrane oxygenation in critically ill COVID-19 patients and predictors of mortality. *Artif Organs.* 2021 Jun;45(6):E158-E170. doi: 10.1111/aor.13873. Epub 2020 Dec 28. PMID: 33236373; PMCID: PMC7753822.
14. Billig S*, **Zayat R***, Ebeling A, Steffen H, Nix C, Hatam N, Schnöring H, Derwall M. Transesophageal echocardiography in swine: evaluation of left and right ventricular structure, function and myocardial work. *Int J Cardiovasc Imaging.* 2021 Mar;37(3):835-846. doi: 10.1007/s10554-020-02053-7. Epub 2020 Oct 13. PMID: 33048268; PMCID: PMC7969559.
15. Kalverkamp S, Mantas A, Spillner J, Hima F, Kanzler SS, Stopinski T, Tolba RH, **Zayat R**. Efficacy of a Novel Medical Adhesive for Sealing Lung Parenchyma: An in vitro Study in Rabbit Lungs. *Eur Surg Res.* 2021;62(4):255-261. doi:10.1159/000517173. Epub 2021 Jul 21. PMID: 34289469.
16. Durak K*, **Zayat R***, Grottke O, Dreher M, Autschbach R, Marx G, Marx N, Spillner J, Kalverkamp S, Kersten A. Extracorporeal membrane oxygenation in patients with COVID-19: 1-year experience. *J Thorac Dis.* 2021 Oct;13(10):5911-5924. doi: 10.21037/jtd-21-971. PMID: 34795939; PMCID: PMC8575858.

17. Autschbach T, Hatam N, Durak K, Grottke O, Dreher M, Nubbemeyer K, Rossaint R, Marx G, Marx N, Spillner J, **Zayat R**, Kalverkamp S, Kersten A. Outcomes of Extracorporeal Membrane Oxygenation for Acute Respiratory Distress Syndrome in COVID-19 Patients: A Propensity-Matched Analysis. *J Clin Med*. 2021 Jun 9;10(12):2547. doi: 10.3390/jcm10122547. PMID: 34207573; PMCID: PMC822707
18. Albanna W, Weiss M, Veldeman M, Conzen C, Schmidt T, Blume C, **Zayat R**, Clusmann H, Stoppe C, Schubert GA. Urea-Creatinine Ratio (UCR) After Aneurysmal Subarachnoid Hemorrhage: Association of Protein Catabolism with Complication Rate and Outcome. *World Neurosurg*. 2021 Jul;151:e961-e971. doi: 10.1016/j.wneu.2021.05.025. Epub 2021 May 18. PMID: 3402005
19. Barton H, Zechendorf E, Ostareck D, Ostareck-Lederer A, Stoppe C, **Zayat R**, Simon-Philipp T, Marx G, Bickenbach J. Prognostic Value of GDF-15 in Predicting Prolonged Intensive Care Stay following Cardiac Surgery: A Pilot Study. *Dis Markers*. 2021 Jun 15;2021:5564334. doi: 10.1155/2021/5564334. PMID: 34221186; PMCID: PMC8221876.
20. Nix C*, **Zayat R***, Ebeling A, Goetzenich A, Chandrasekaran U, Rossaint R, Hatam N, Derwall M. Inhaled nitric oxide preserves ventricular function during resuscitation using a percutaneous mechanical circulatory support device in a porcine cardiac arrest model: an echocardiographic myocardial work analysis. *BMC Cardiovasc Disord*. 2021 Apr 17;21(1):189. doi: 10.1186/s12872-021-01992-w. PMID: 33865330; PMCID: PMC8052698.
21. Selten K, Schnoering H, **Zayat R**, Aljalloud A, Moza A, Autschbach R, Tewarie L. Prevention of Sternal Wound Infections in Women Using an External Sternum Fixation Corset. *Ann Thorac Cardiovasc Surg*. 2021 Feb 20;27(1):25-31. doi: 10.5761/atcs.0a.19-00293. Epub 2020 Jul 2. PMID: 32611929; PMCID: PMC8043031.
22. Durak K, Kersten A, Grottke O, **Zayat R**, Dreher M, Autschbach R, Marx G, Marx N, Spillner J, Kalverkamp S. Thromboembolic and Bleeding Events in COVID-19 Patients receiving Extracorporeal Membrane Oxygenation. *Thorac Cardiovasc Surg*. 2021 Sep;69(6):526-536. doi: 10.1055/s-0041-1725180. Epub 2021 Apr 16. PMID:33862633.
23. Nix C, Ishikawa K, Meyns B, Yasuda S, Adriaenssens T, Barth S, **Zayat R**, Leprince P, Lebreton G. Comparison of Hemodynamic Support by Impella vs. Peripheral Extra-Corporeal Membrane Oxygenation: A Porcine Model of Acute Myocardial Infarction. *Front Cardiovasc Med*. 2020 Jun 10;7:99. doi: 10.3389/fcvm.2020.00099. PMID: 32587862; PMCID: PMC7299088.
24. Spetsotaki K*, **Zayat R***, Donuru S, Autschbach R, Schnoering H, Hatam N. Evaluation of Left Ventricular Myocardial Work Performance in Patients Undergoing On-Pump and Off-Pump Coronary Artery Bypass Surgery. *Ann Thorac Cardiovasc Surg*. 2020 Oct 21;26(5):276-285. doi: 10.5761/atcs.0a.20-00066. Epub 2020 Sep 7. PMID: 32893224; PMCID: PMC7641886

25. **Zayat R**, Drosos V, Schnoering H, Lee JY, Bleilevens C, Musetti G, Jansen-Park SH, Kang H, Menon AK, Schmitz-Rode T, Autschbach R, Hatam N, Moza A. Radial Artery Tonometry to Monitor Blood Pressure and Hemodynamics in Ambulatory Left Ventricular Assist Device Patients in Comparison With Doppler Ultrasound and Transthoracic Echocardiography: A Pilot Study. *Artif Organs*. 2019 Mar;43(3):242-253. doi: 10.1111/aor.13335. Epub 2018 Oct 11. PMID: 30040134.
26. Tewarie L, Moza AK, Khattab MA, Autschbach R, **Zayat R**. Effective Combination of Different Surgical Strategies for Deep Sternal Wound Infection and Mediastinitis. *Ann Thorac Cardiovasc Surg*. 2019 Apr 20;25(2):102-110. doi: 10.5761/atcs.0a.18-00115. Epub 2018 Nov 7. PMID: 30404980; PMCID: PMC6477456.
27. Bleilevens C, Hill A, Grzanna T, Fechter T, Bohnen M, Weber HJ, Beckers C, Borosch S, **Zayat R**, Benstoem C, Rossaint R, Goetzenich A. In vitro head-to-head comparison of anticoagulation properties of two heparin brands in a human blood miniature mock loop. *Interact Cardiovasc Thorac Surg*. 2019 Jan 1;28(1):120-127. doi: 10.1093/icvts/ivy206. PMID: 30010987.
28. Hima F, Gümmer M, Prescher A, Altarawneh B, **Zayat R**, Hatam N, Ernst L, Kalverkamp S, Spillner J, Arias-Pinilla J. A New Percutaneous Approach to Treat Combined Right Ventricular and Respiratory Failure: The "Aachen Cannula". *Eur Surg Res*. 2019;60(5- 6):229-238. doi: 10.1159/000504411. Epub 2019 Nov 19. PMID: 31743901
29. Berg T, Tewarie L, Moza A, **Zayat R**, Autschbach R, Stoppe C, Goetzenich A, Benstoem C. Anforderungen an die ambulante Versorgung nach Implantation eines ventrikulären Herzunterstützungssystems : Sichtweise von Patienten und Angehörigen [Requirements for outpatient care after implantation of a ventricular assist device : Views of patients and their relatives]. *Herz*. 2019 May;44(3):257-264. German. doi: 10.1007/s00059-017- 4636-4. Epub 2017 Oct 27. PMID: 29079934.
30. **Zayat R**, Moza A, Grottke O, Grzanna T, Fechter T, Motomura T, Schmidt-Mewes C, Breuer T, Autschbach R, Rossaint R, Goetzenich A, Bleilevens C. In vitro comparison of the hemocompatibility of two centrifugal left ventricular assist devices. *J Thorac Cardiovasc Surg*. 2019 Feb;157(2):591-599.e4. doi: 10.1016/j.jtcvs.2018.07.085. Epub 2018 Aug 6. PMID: 30414772.
31. Schick D, Babendreyer A, Wozniak J, Awan T, Noels H, Liehn E, Bartsch JW, Vlacil AK, Grote K, **Zayat R**, Goetzenich A, Ludwig A, Dreyemueller D. Elevated expression of the metalloproteinase ADAM8 associates with vascular diseases in mice and humans. *Atherosclerosis*. 2019 Jul;286:163-171. doi: 10.1016/j.atherosclerosis.2019.03.008. Epub 2019 Mar 17. PMID: 30910225.
32. **Zayat R**, Shoab M, Khattab MA, Ahmad U, Goetzenich A, Stoppe C, Foldenauer AC, Moza A, Schnoering H, Autschbach R, Tewarie L. Are elevated serum haemolysis markers a harbinger of adverse events in HeartMate II patients? *Interact Cardiovasc Thorac Surg*. 2018 Jul 1;27(1):5-12. doi: 10.1093/icvts/ivy027. PMID: 29444250.

33. **Zayat R**, Ahmad U, Stoppe C, Khattab MA, Arab F, Moza A, Tewarie L, Goetzenich A, Autschbach R, Schnoering H. Sildenafil Reduces the Risk of Thromboembolic Events in HeartMate II Patients with Low-Level Hemolysis and Significantly Improves the Pulmonary Circulation. *Int Heart J*. 2018 Nov 28;59(6):1227-1236. doi: 10.1536/ihj.18-001. Epub 2018 Oct 10. PMID: 30305587.
34. **Zayat R**, Khattab MA, Grottke O, Honickel M, Goetzenich A, Moza A, Stoppe C, Autschbach R, Tewarie L. Survival of HeartMate II Patients Despite Cessation of Anticoagulation - Outcomes and Hemostatic Analysis. *Circ J*. 2018 Apr 25;82(5):1309-1318. doi: 10.1253/circj.CJ-17-0897. Epub 2017 Dec 12. PMID: 29237991.
35. Tewarie L, Chernigov N, Goetzenich A, Moza A, Autschbach R, **Zayat R**. The Effect of Ultrasound-Assisted Debridement Combined with Vacuum Pump Therapy in Deep Sternal Wound Infections. *Ann Thorac Cardiovasc Surg*. 2018 Jun 20;24(3):139-146. doi: 10.5761/atcs.0a.17-00244. Epub 2018 Mar 22. PMID: 29563372; PMCID: PMC6033525
36. Hempe S, Moza A, Goetzenich A, Tewarie L, Bleilevens C, Autschbach R, Schnoering H, **Zayat R**. Synchronous or Staged Carotid Endarterectomy and Coronary Artery Bypass Grafting? Propensity score matched study. *Heart Surg Forum*. 2018 Aug 17;21(5):E359-E364. doi: 10.1532/hsf.2074. PMID: 30311885.
37. Steffen HJ, Kalverkamp S, **Zayat R**, Autschbach R, Spillner JW, Hagendorff A, Hatam N. Is Systolic Right Ventricular Function Reduced after Thoracic Non-Cardiac Surgery? A Propensity Matched Echocardiographic Analysis. *Ann Thorac Cardiovasc Surg*. 2018 Oct 19;24(5):238-246. doi: 10.5761/atcs.0a.18-00046. Epub 2018 Jun 7. PMID: 29877218; PMCID: PMC6198000.
38. Aljalloud A, Shoaib M, Egron S, Arias J, Tewarie L, Schnoering H, Lotfi S, Goetzenich A, Hatam N, Pott D, Zhong Z, Steinseifer U, **Zayat R***, Autschbach R*. The flutter-by effect: a comprehensive study of the fluttering cusps of the Perceval heart valve prosthesis. *Interact Cardiovasc Thorac Surg*. 2018 Nov 1;27(5):664-670. doi: 10.1093/icvts/ivy162. PMID: 29788476.
39. Heldmaier K, Stoppe C, Goetzenich A, Foldenauer AC, **Zayat R**, Breuer T, Schälte G. Oxidation-Reduction Potential in Patients undergoing Transcatheter or Surgical Aortic Valve Replacement. *Biomed Res Int*. 2018 Nov 14;2018:8469383. doi: 10.1155/2018/8469383. PMID: 30539023; PMCID: PMC6261068.
40. **Zayat R**, Menon AK, Goetzenich A, Schaelte G, Autschbach R, Stoppe C, Simon TP, Tewarie L, Moza A. Benefits of ultra-fast-track anesthesia in left ventricular assist device implantation: a retrospective, propensity score matched cohort study of a four-year single center experience. *J Cardiothorac Surg*. 2017 Feb 8;12(1):10. doi: 10.1186/s13019-017-0573-9. PMID: 28179009; PMCID: PMC5299681.

41. **Zayat R**, Goetzenich A, Lee JY, Kang H, Jansen-Park SH, Schmitz- Rode T, Musetti G, Schnoering H, Autschbach R, Hatam N, Aljalloud A. Comparison between radial artery tonometry pulse analyzer and pulsed-Doppler echocardiography derived hemodynamic parameters in cardiac surgery patients: a pilot study. *PeerJ*. 2017 Dec 6;5:e4132. doi: 10.7717/peerj.4132. PMID: 29230366; PMCID: PMC5723137.
42. Boegershausen N*, **Zayat R***, Aljalloud A, Musetti G, Goetzenich A, Tewarie L, Moza A, Amerini A, Autschbach R, Hatam N. Risk factors for the development of right ventricular failure after left ventricular assist device implantation-a single-centre retrospective with focus on deformation imaging. *Eur J Cardiothorac Surg*. 2017 Dec 1;52(6):1069-1076. doi: 10.1093/ejcts/ezx123. PMID:28481994.
43. **Zayat R**, Arias-Pinilla J, Aljalloud A, Musetti G, Goetzenich A, Autschbach R, van Gemmeren T, Niedeggen A, Hatam N. Performance of the Labcor Dokimos Plus pericardial aortic prosthesis: a single-centre experience. *Interact Cardiovasc Thorac Surg*. 2017 Mar 1;24(3):355-362. doi: 10.1093/icvts/ivw401. PMID: 28025312.
44. Feldmann C*, **Zayat R***, Goetzenich A, Aljalloud A, Woelke E, Maas J, Tewarie L, Schmitz-Rode T, Autschbach R, Steinseifer U, Moza A. Perioperative onset of acquired von Willebrand syndrome: Comparison between HVAD, HeartMate II and on-pump coronary bypass surgery. *PLoS One*. 2017 Feb 24;12(2):e0171029. doi: 10.1371/journal.pone.0171029. PMID:28234916; PMCID: PMC5325196.
45. Tewarie L, Moza AK, **Zayat R**, Autschbach R, Goetzenich A, Menon AK. Ultrasound-assisted treatment of sternocutaneous fistula in post-sternotomy cardiac surgery patients. *Eur J Cardiothorac Surg*. 2015 May;47(5):e180-7;discussion e187. doi: 10.1093/ejcts/ezv007. Epub 2015 Feb 11. PMID: 25678528.
46. Tewarie L*, **Zayat R***, Haefner H, Spillner J, Goetzenich A, Autschbach R, Moza A. Does percutaneous dilatational tracheostomy increase the incidence of sternal wound infection - a single center retrospective of 4100 cases. *J Cardiothorac Surg*. 2015 Nov 6;10:155. doi: 10.1186/s13019-015-0365-z. Erratum in: *J Cardiothorac Surg*. 2016;11:26. PMID: 26546171; PMCID: PMC4635530.