

Long-Term Outcomes After Percutaneous Lower Extremity Arterial Interventions With Atherectomy vs. Balloon Angioplasty — Propensity Score-Matched Registry —

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Background: The impact of endovascular revascularization of the lower extremity arteries with atherectomy (AT) compared with percutaneous transluminal angioplasty (PTA) is still unclear. Therefore, the aim of the study was to compare long-term outcomes after percutaneous PTA and AT in patients requiring endovascular revascularization.

Methods and Results: This was a single-center, retrospective registry of obstructive and symptomatic PAD patients who underwent endovascular revascularization. PTA was performed in 215 patients, and AT in 204 (Silver Hawk, EV3, n=125; CSI 360°, n=66; Pathway Medical Technologies, n=13). There were no significant between-group differences in baseline characteristics except for increased CAD, dialysis and CLI prevalence in the PTA group. Following propensity score analysis 131 well-matched pairs were included in analysis. Bail-out stenting was more frequent in the reference group (PTA, 6.1% vs. AT, 0%; $P=0.004$). At 6- and 12-month follow-up there were no differences in TLR between the groups (PTA, 8.3% vs. AT, 5.3%; $P=0.47$; and PTA, 16.7% vs. AT, 13.7%; $P=0.73$, respectively). The difference was in favor of AT at 24-month follow-up (PTA, 29.0% vs. AT, 16.7%; $P=0.05$). No difference was observed in amputation rate (PTA, 0.7% vs. AT, 1.5%; $P=0.62$). On Kaplan-Meier analysis there were no significant differences between groups in time to TLR, amputation or death.

Conclusions: AT was associated with lower risk of TLR, and this should be confirmed in randomized controlled trials.

Key Words: Atherectomy; Claudication; Critical limb ischemia; Percutaneous transluminal angioplasty; Peripheral artery disease

According to recent clinical practice and evidence, endovascular revascularization of the lower limb arteries has superseded surgical procedures.^{1,2} Regardless of advancement in endovascular technology, restenosis and the need for repeat revascularization are still challenging. Moreover, the mortality in peripheral artery disease (PAD), especially in critical limb ischemia (CLI), is high, fluctuating at around 20% at 6-month follow-up, and exceeding 50% within 5 years from diagnosis.^{3,4} These numbers increase in patients with coexisting symptomatic coronary artery disease (CAD). Additionally, CLI is associated with poor quality of life⁵ and high treatment costs.⁶ Nowadays, multiple therapies for PAD have emerged, including pharmacological regimens, endovascular and open surgery, drug-coated balloons (DCB), and stem cell therapy.⁷ On top of that, stenting has become popular, due to the

reassuring early outcome. In contrast, in the femoropopliteal artery mechanical stress is high, thus implanted stents are exposed to the risk of stent fracture and malformation, increasing the rate of restenosis.^{8,9} In the below-the-knee (BTK) region, use of metal, balloon-expandable drug-eluting stents is more common than the self-expandable nitinol ones, because those stents are even more susceptible to fracture. Moreover, due to the characteristics of BTK lesions, in most cases multiple stents are needed.¹⁰ Therefore, atherectomy (AT), which removes the atherosclerotic plaque from the arterial wall, appears to be promising. This expectancy is linked to the fact that these devices cut out the plaque from the artery wall, thus significantly increasing lumen diameter and removing potential sources of inflammation, thus facilitating satisfactory outcome.¹¹

Thus far, the long-term outcomes after endovascular

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Long Term Results Of Arterial Interventions

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Long Term Results Of Arterial Interventions:

Long-Term Results of Arterial Interventions Alain Branchereau, MD, Michael Jacobs, MD, 1997-10-07 This volume is particularly valuable as a current standard reference. It covers all the major vascular operations: carotid endarterectomy, aortoiliac reconstructions and infrainguinal bypasses in situ and reversed vein Dacron and PTFE prosthetic thoracic and abdominal bypasses matching each to its competing endovascular procedure. In addition, it provides excellent long-term data on such less common procedures as internal carotid bypass, vertebral artery revascularization, adjunctive procedures to enhance the patency of infrainguinal prosthetic bypass and percutaneous intentional extraluminal revascularization. Finally, this framework is reinforced by in-depth chapters on current non-interventional management, surveillance programs to enhance long-term patency and the ultimate challenge for all practicing vascular surgeons: the management of infected aortic grafts. Such clear, comprehensive and current analysis should be of considerable and on-going value both by helping vascular surgeons to make more effective decisions and to more knowledgeably discuss functional results, complication risks, life expectancy and surgical outcome issues with the patient and family.

Peripheral Arterial Interventions Nicolas W. Shamma, 2022-10-13 This book examines new technologies, device and pharmacologic that have evolved over the past few years in treating peripheral arterial disease. Chapters offer optimal strategies to treat PAD supported by peer-reviewed data. The pillars of this strategy will focus on a changing vessel compliance to allow better lumen expansion, less recoil and dissections and less bailout stenting. Chapters also review embolic protection devices and apply the adjunctive use of anti-proliferative therapy to maintain good long-term outcomes. In addition, the book reviews drug-coated balloons and drug-eluting stent technologies and other means of drug delivery into the vessel wall. The goal of this book is to discuss all these emerging technologies under the strategy of treating patients with the focus on both acute and long-term outcomes. Featuring world-renown experts, this book offers a critical and comprehensive overview of the current data and future directions that would pave the way for optimal PAD management. *Peripheral Arterial Interventions* is an essential resource for physicians, residents, fellows and medical students in cardiology, radiology, vascular surgery, primary care and health promotion and disease prevention as well as internal and vascular medicine specialists.

Cardiovascular Interventions in Clinical Practice Jürgen Haase, Hans-Joachim Schäfers, Horst Sievert, Ron Waksman, 2010-04-01 Until the publication of this exciting volume, new treatment modalities in the rapidly growing field of interventional cardiology were described based on individual research findings. Now a multidisciplinary team of international experts puts catheter-based treatment techniques in context by exploring the pathobiology of specific diseases alongside a discussion of imaging tools and functional tests and a comparison to alternative treatment approaches provided by cardiovascular surgery. This comprehensive overview of interventional cardiology represents a landmark in the field.

Manual of Peripheral Vascular Intervention Ivan P. Casserly, Ravish Sachar, Jay S. Yadav, 2005 This manual is a practical how-to guide to vascular interventional procedures for

all arteries and veins outside the coronary vascular system The book provides the information needed to evaluate patients and perform procedures and describes the actual techniques used by experienced practitioners including anticoagulants antithrombotics wires guides angioplasty and stents More than 400 illustrations complement the text Chapters on each artery cover indications for interventional procedures vascular anatomy access diagnostic angiography and specific interventional techniques Complications and risks of restenosis are also discussed The book also includes a chapter on training and credentialing in peripheral vascular intervention

Guide to Peripheral and Cerebrovascular Intervention Deepak L. Bhatt,2004 Provides a highly illustrated technical overview of endovascular procedures Each chapter contains an overview of a specific area supplemented by tables line diagrams and angiograms

Cardiovascular Catheterization and Intervention Debabrata Mukherjee, Eric Bates, Marco Roffi, David Moliterno, 2010-08-24 The field of invasive and interventional cardiology is dynamic with frequent advances in both technique and technology An internationally renowned team of editors and over 100 contributors have shaped this textbook to provide clinicians with a thorough guide that covers the procedural and peri procedural aspects of coronary peripheral and structural heart disease diagnostics and interventions This comprehensive and highly illustrated textbook presents critical information for anyone active in the field of cardiovascular interventions including Practical suggestions on how to set up a cardiovascular catheterization laboratory choose the right equipment and minimize radiation exposure A careful analysis of the general principles of percutaneous coronary interventions the specific knowledge needed in different clinical scenarios as well as the patient selection criteria for each invasive procedure In depth coverage of non coronary interventions including 13 chapters on peripheral vascular interventions including carotid artery stenting as well as newer procedures for intracranial stenosis treatment septal defect repair and left atrial appendage closure An incorporation of emerging procedures in structural heart disease such as percutaneous aortic valve replacement and mitral valve repair that although not presently mainstream will likely become an important domain of interventional cardiologists Given the importance of appropriate training and credentialing for clinicians the textbook also includes current national guidelines and policies on the performance of the various procedures

Image-Guided Interventions E-Book Matthew A. Mauro, Kieran P.J. Murphy, Kenneth R. Thomson, Anthony C. Venbrux, Robert A. Morgan, 2013-09-09 2014 BMA Medical Book Awards Highly Commended in Radiology category Image Guided Interventions a title in the Expert Radiology Series brings you in depth and advanced guidance on all of today s imaging and procedural techniques Whether you are a seasoned interventionalist or trainee this single volume medical reference book offers the up to the minute therapeutic methods necessary to help you formulate the best treatment strategies for your patients The combined knowledge of radiology experts from around the globe provides a broad range of treatment options and perspectives equipping you to avoid complications and put today s best approaches to work in your practice the authors and editors have succeeded in providing a book that is both useful instructive and practical Reviewed by

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Cardio-Nephrology Janani Rangaswami, Edgar V. Lerma, Claudio Ronco, 2017-07-31 Extending from the outpatient management of cardiovascular and kidney disease to hospital based decision making in patients with cardio renal disease and complex interfaces such as hemodialysis in patients with ventricular assist device support this book serves as a single reference point for cardiology and nephrology clinicians and researchers dealing with the significant overlap areas between these two specialties Chapters cover the physiology biomarkers therapeutic agents and full spectrum of these comorbidities and feature separate sections on cardiovascular and CKD evaluations stratification of kidney transplant patients lipid management in CKD interventional strategies and hypertension Leaders in cardiology nephrology hypertension and lipidology bring together the latest evidence with their collective clinical experience into this invaluable resource This textbook is an essential resource for physicians and allied professionals practicing cardiology nephrology students and physician trainees to deepen their understanding of this crucial field *Cardiovascular*

Intervention E-Book Deepak L. Bhatt, 2023-09-08 Selected for 2025 Doody's Core Titles in Cardiology Part of the renowned Braunwald family of references Cardiovascular Intervention A Companion to Braunwald's Heart Disease provides today's clinicians with clear authoritative guidance on every aspect of catheterization of the heart and vasculature and the latest imaging technologies This practical reference on interventional cardiology is organized from a procedural perspective with chapters focused exclusively on how to manage complex cardiovascular disease Now fully updated from cover to cover the 2nd Edition offers authoritative and current point of care coverage of this highly complex technology driven specialty an ideal resource for practitioners at all levels of experience Offers concise focused coverage of all aspects of managing interventional cardiology patients highlighting cautions procedural nuances and tips and outcomes Covers all the newest catheterization techniques and equipment including new generation stents mechanical support devices imaging technology and closure

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Moscucci,2012-03-28 This textbook provides interventional cardiologists endovascular interventionalists and physicians in training with a comprehensive resource on the prevention and management of complications in interventional cardiology The book focuses specifically on risk factors prevention and management with conventional and or with bailout techniques and devices It includes many images of common and rare complications and of devices The first section on general principles includes quality assurance training requirements legal considerations adjunctive pharmacotherapy and conscious sedation Subsequent sections cover general complications of invasive procedures and complications of specific coronary interventions noncoronary cardiac interventions peripheral vascular procedures pediatric interventions and electrophysiology procedures A companion website includes videos of over 30 complications and bailout techniques *Grossman & Baim's Cardiac Catheterization, Angiography, and Intervention* Mauro Moscucci,2020-09-10 The leading comprehensive reference on cardiac catheterization through eight outstanding editions Grossman Baim s Cardiac Catheterization Angiography and Intervention Ninth Edition continues to keep you up to date with every facet of this fast changing field Designed for quick access and easy reference this text offers expert overviews of the theoretical and practical aspects of clinical issues with emphasis given to hemodynamic data and tracings and interventional procedures An impressive multimedia library with new videos and cases make this reference even more valuable for cardiologists and interventional cardiologists at all levels of experience

Complications in Peripheral Vascular Interventions Martin Schillinger,Erich Minar,2007-05-31 Increasing evidence suggests that particularly in high risk patients endovascular solutions offer substantial advantages compared to vascular surgical procedures Nevertheless growing numbers of procedures are associated with an increased incidence of complications Knowledge of specific complications in different vessel areas will support the interventionist in preventing such adverse events and if necessary provide considerable reassurance if such complications need to be resolved In *Complications in Peripheral Vascular Interventions* typical and atypical complications are described for all peripheral vessel areas and methods for how to handle these events are outlined The book is divided in two parts Part 1 reviews general aspects on complications in peripheral interventions and Part II covers the specific vessel areas Each chapter on the specific vessel area includes Introduction to the frequency and kind of complications in this vessel area Factors identifying high risk patients for these complications Complications of specific interventional steps and tools Endovascular techniques to resolve

these complications Methods to avoid complications Summary Checklist for emergency equipment Offering practical tips for the interventionist in the cath lab high volume interventionists share their experiences by reviewing complicated cases and outlining different strategies used in real life scenarios *Strategic Approaches in Coronary Intervention* Stephen Geoffrey Ellis, David R. Holmes, 2006 Updated to include the newest devices and procedures this practical reference is a clinically oriented guide to interventional cardiology Chapters by the foremost experts present step by step approaches to specific clinical problems and offer guidelines for selecting the most appropriate device and technique The authors recommendations are backed by their extensive experience and by evidence based clinical trials This Third Edition describes the latest stents and stenting procedures including local drug delivery with coated stents and provides state of the art information on local myocyte injection distal protection devices peripheral vascular intervention and new adjunctive therapies The concluding chapter previews future developments in the field Advanced Therapy in Hypertension and Vascular Disease Emile R. Mohler (III.), 2006 Provides a resource for health care professionals who evaluate and manage patients with hypertension Topics include hypertension in adolescents treatment of hypertension in athletes hypertension and weight loss salt and dietary change to control blood pressure and more **Index Medicus** , 2004 Vols for 1963 include as pt 2 of the Jan issue Medical subject headings *Textbook of Interventional Cardiology E-Book* Eric J. Topol, Paul S. Teirstein, 2015-08-21 Ideal for cardiologists surgeons and referring physicians who need a clinical guide to interventional procedures Textbook of Interventional Cardiology focuses on the latest treatment protocols for managing heart disorders at every level of complexity In this updated edition Dr Topol continues to bring together experts in the field who present the current state of knowledge and clinical practice in interventional cardiology including cutting edge theories trends and applications of diagnostic and interventional cardiology as well as peripheral vascular techniques and practices Offers an in depth understanding of cardiology making it well suited for cardiology and interventional cardiology exam preparation Expert guidance from leading authorities ensures a fresh and balanced perspective on every aspect of interventional cardiology Presents the most recent genetic information and clinical trials related to interventional cardiology Highlights the latest treatment advances procedures devices and techniques including transcatheter aortic valve implantation TAVI Brand new chapters include Radiation Safety Renal Denervation for Resistant Hypertension Post PCI Hospitalization Length of Stay and Discharge Planning and Interventional Heart Failure Offers balanced coverage of the entire scope of technologies available without favoring one particular device over another Integrates the latest trial data into discussions on clinical practice and recommendations Multiple images of devices and intra procedural imaging enhance your visual understanding of the material Key Points boxes at the beginning of each chapter summarize the most important facts **Textbook of Interventional Cardiology** Eric J. Topol, MD, Paul S. Teirstein, MD, 2015-09-30 Ideal for cardiologists surgeons and referring physicians who need a clinical guide to interventional procedures Textbook of Interventional Cardiology focuses on

the latest treatment protocols for managing heart disorders at every level of complexity In this updated edition Dr Topol continues to bring together experts in the field who present the current state of knowledge and clinical practice in interventional cardiology including cutting edge theories trends and applications of diagnostic and interventional cardiology as well as peripheral vascular techniques and practices Offers an in depth understanding of cardiology making it well suited for cardiology and interventional cardiology exam preparation Expert guidance from leading authorities ensures a fresh and balanced perspective on every aspect of interventional cardiology Presents the most recent genetic information and clinical trials related to interventional cardiology Highlights the latest treatment advances procedures devices and techniques including transcatheter aortic valve implantation TAVI Brand new chapters include Radiation Safety Renal Denervation for Resistant Hypertension Post PCI Hospitalization Length of Stay and Discharge Planning and Interventional Heart Failure Offers balanced coverage of the entire scope of technologies available without favoring one particular device over another Integrates the latest trial data into discussions on clinical practice and recommendations Multiple images of devices and intra procedural imaging enhance your visual understanding of the material Key Points boxes at the beginning of each chapter summarize the most important facts Features 45 videos easily accessible via Expert Consult Expert Consult eBook version included with purchase This enhanced eBook experience offers access to all of the text figures videos and references from the book on a variety of devices

[Cardiovascular Intervention: A Companion to Braunwald's Heart Disease E-Book](#) Deepak L. Bhatt, 2015-03-22 Introducing Cardiovascular Intervention a comprehensive companion volume to Braunwald's Heart Disease This medical reference book contains focused chapters on how to utilize cutting edge interventional technologies with an emphasis on the latest protocols and standards of care Cardiovascular Intervention also includes late breaking clinical trials Hot off the Press commentary and Focused Reviews that are relevant to interventional cardiology View immersive videos from an online library of procedural clips located on Expert Consult Remain abreast of the newest interventional techniques including next generation stents invasive lesion assessment and methods to tackle complex anatomy Provide optimal patient care with help from easy to access information on the latest diagnostic and treatment advances discussions on percutaneous approaches to structural heart disease and new developments in treating heart valve disease

Vascular Interventional Radiology Mark G. Cowling, 2006-12-26 This volume focusses on the current evidence surrounding the use of endovascular therapy It updates and complements the earlier Medical Radiology volume on the Radiology of Peripheral Vascular Diseases Some background information is provided on vascular biology and the facilities required for safe endovascular practice along with guidance on consent issues Further chapters deal with endovascular treatment in particular arterial territories and include the evidence in favour of or against the use of specific treatments The most up to date evidence surrounding endovascular aneurysm repair is discussed There are also chapters on venous interventions including the endovascular management of varicose veins This book will be of value both to interventional

radiologists and to vascular surgeons with an interest in endovascular techniques *Rutherford's Vascular Surgery and Endovascular Therapy, E-Book* Anton N Sidawy, Bruce A Perler, 2018-04-03 Through nine outstanding editions Rutherford's Vascular Surgery and Endovascular Therapy has been the gold standard text in this fast changing complex field Published in association with the Society for Vascular Surgery this state of the art reference by Drs Anton N Sidawy and Bruce A Perler is a must have for vascular surgeons interventionalists vascular medicine specialists and trainees as well as general surgeons interventional radiologists and cardiologists that depend upon Rutherford's in their practice It offers authoritative guidance from the most respected and innovative global thought leaders and clinical and basic science experts in the diagnosis and treatment of circulatory disease Incorporates medical endovascular and surgical treatment as well as diagnostic techniques decision making and fundamental vascular biology Features all vascular imaging techniques offering a non invasive evaluation of both the morphology and hemodynamics of the vascular system Provides unparalleled insight from multidisciplinary leaders worldwide who share their expertise on the most appropriate contemporary and future treatment of circulatory disease Employs a full color layout and images so you can view clinical and physical findings and operative techniques more vividly Includes 40 new chapters incorporating a shorter more focused format with a summary for each chapter that provides a quick access to key information ideal for consultation situations as well as daily practice Some of these chapters are organized in new sections dedicated to open operative exposure and vessel dissection techniques diabetic foot Pediatric Vascular Disease and practice management issues areas in the specialty that clinicians frequently face but seldom detailed in other vascular texts nor in earlier Rutherford editions Covers hot topics such as endovascular therapy of aortic arch and thoracoabdominal aortic aneurysm disease including the evolving management of aortic dissections Expert Consult™ eBook version included with purchase This enhanced eBook experience allows you to search all of the text figures and references from the book on a variety of devices

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Table of Contents Long Term Results Of Arterial Interventions

1. Understanding the eBook Long Term Results Of Arterial Interventions
 - The Rise of Digital Reading Long Term Results Of Arterial Interventions
 - Advantages of eBooks Over Traditional Books
2. Identifying Long Term Results Of Arterial Interventions
 - Exploring Different Genres
 - Considering Fiction vs. Non-Fiction
 - Determining Your Reading Goals
3. Choosing the Right eBook Platform
 - Popular eBook Platforms
 - Features to Look for in an Long Term Results Of Arterial Interventions
 - User-Friendly Interface
4. Exploring eBook Recommendations from Long Term Results Of Arterial Interventions
 - Personalized Recommendations
 - Long Term Results Of Arterial Interventions User Reviews and Ratings

- Long Term Results Of Arterial Interventions and Bestseller Lists
- 5. Accessing Long Term Results Of Arterial Interventions Free and Paid eBooks
 - Long Term Results Of Arterial Interventions Public Domain eBooks
 - Long Term Results Of Arterial Interventions eBook Subscription Services
 - Long Term Results Of Arterial Interventions Budget-Friendly Options
- 6. Navigating Long Term Results Of Arterial Interventions eBook Formats
 - ePub, PDF, MOBI, and More
 - Long Term Results Of Arterial Interventions Compatibility with Devices
 - Long Term Results Of Arterial Interventions Enhanced eBook Features
- 7. Enhancing Your Reading Experience
 - Adjustable Fonts and Text Sizes of Long Term Results Of Arterial Interventions
 - Highlighting and Note-Taking Long Term Results Of Arterial Interventions
 - Interactive Elements Long Term Results Of Arterial Interventions
- 8. Staying Engaged with Long Term Results Of Arterial Interventions
 - Joining Online Reading Communities
 - Participating in Virtual Book Clubs
 - Following Authors and Publishers Long Term Results Of Arterial Interventions
- 9. Balancing eBooks and Physical Books Long Term Results Of Arterial Interventions
 - Benefits of a Digital Library
 - Creating a Diverse Reading Collection Long Term Results Of Arterial Interventions
- 10. Overcoming Reading Challenges
 - Dealing with Digital Eye Strain
 - Minimizing Distractions
 - Managing Screen Time
- 11. Cultivating a Reading Routine Long Term Results Of Arterial Interventions
 - Setting Reading Goals Long Term Results Of Arterial Interventions
 - Carving Out Dedicated Reading Time
- 12. Sourcing Reliable Information of Long Term Results Of Arterial Interventions
 - Fact-Checking eBook Content of Long Term Results Of Arterial Interventions
 - Distinguishing Credible Sources

13. Promoting Lifelong Learning
 - Utilizing eBooks for Skill Development
 - Exploring Educational eBooks
14. Embracing eBook Trends
 - Integration of Multimedia Elements
 - Interactive and Gamified eBooks

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