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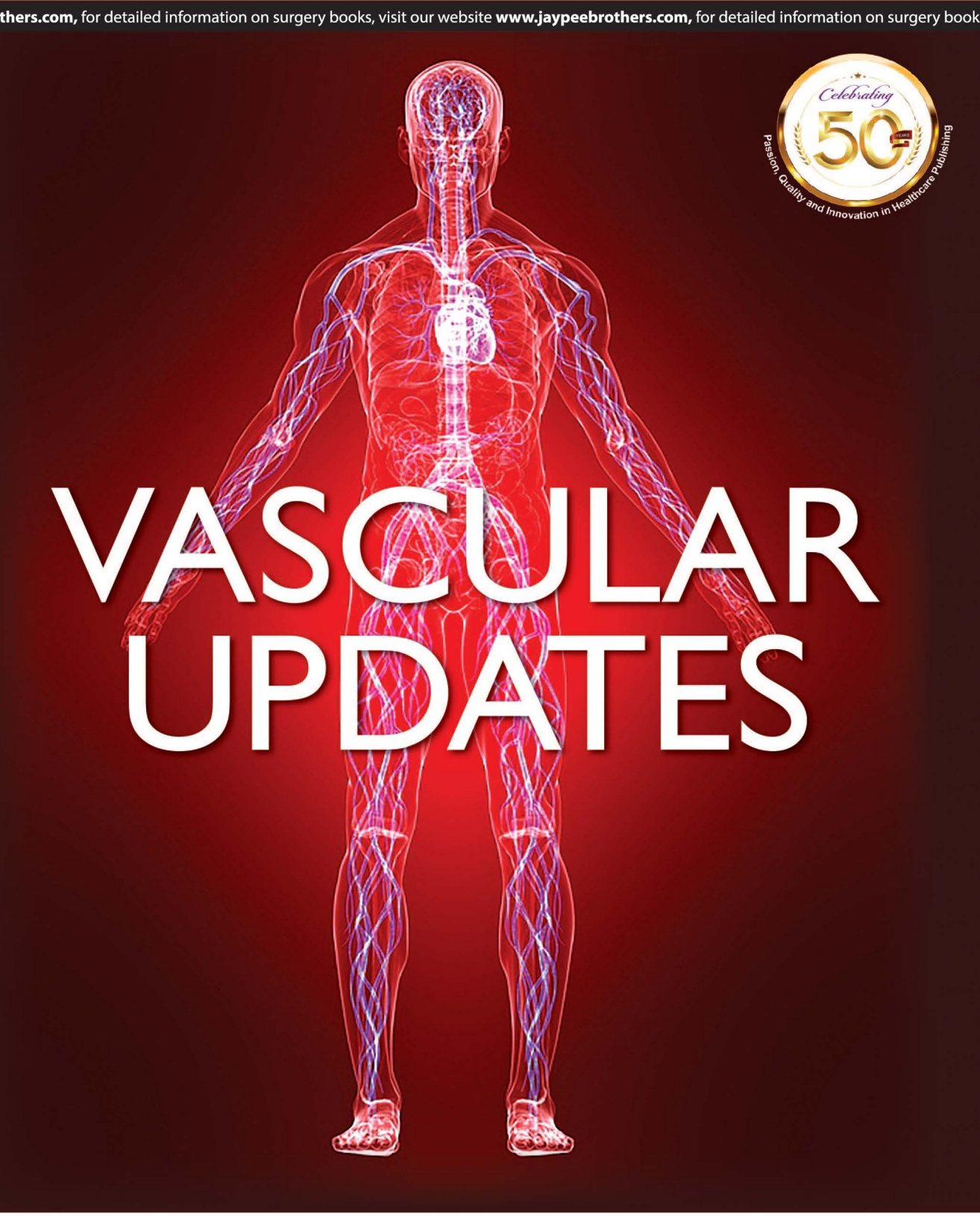

VASCULAR UPDATES

Pinjala Ramakrishna

JAYPEE

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Thursday, September 14, 2017

PGE-1 Infusion and PET Scan to see Increase in the Muscular Blood Flow!

Increase of blood flow in the ischemic leg is believed to represent the main action of prostaglandin E1 (PGE1) in the therapy of peripheral vascular disease (PVD). There is no reliable data in man concerning the amount of increase in muscular blood flow (MBF) of the calf, and the difference between intra-arterial and intravenous application. We conducted a positron emission tomography (PET) study of MBF with 15O-water as flow tracer. Fifteen patients with PVD and three healthy volunteers were given 5 μg PGE1 intra-arterially over 50 minutes; PET scans were taken at 0, 25 and 50 minutes.

Additionally, eight of the patients were investigated during an intravenous infusion of 40 μg PGE1 over 120 minutes; PET scans were taken at 0, 30, 60 and 120 minutes.

Increase of muscular blood flow by intra-arterial PGE1 averaged 80%. A steal phenomenon was not observed. The amount of flow enhancement depended on whether or not the femoral artery was patent. During intravenous PGE1, muscular blood flow remained unchanged. In man, the pharmacodynamic profile of intra-arterial PGE1 differs clearly from intravenous PGE1. The flow-enhancing property is lost during metabolization in the lung. Since no difference exists between the therapeutic efficacy of intrarterial and intravenous PGE1, the impact on muscular blood flow is not as important as suggested previously. Prostaglandin E1 in peripheral vascular disease: A PET study of muscular blood flow.

Monday, July 24, 2017

Quality of Life in Patients with Chronic Venous Disease in Turkey: Influence of Different Treatment Modalities at 6-month Follow-up

Purpose: The main purpose of this study was to evaluate the influence of any of the four domains of the quality of life (QoL) score in chronic venous disease (CVD) patients of classes C0–C4 and to analyze the correlation between the QoL and types of treatment modalities, and an additional aim of the present study was to compare QoL levels of patients with CVD and healthy participants and was to examine the factors associated with QoL in CVD patients.

Methods: The sample was composed of 501 patients with primary superficial venous reflux (28.5% male and 71.5% female) who answered 100% of the questions in the World Health Organization Quality of Life (WHOQoL-BREF) questionnaire. After a clinical and duplex examination, the patients were categorized as C0–C4, according to the CEAP classification. The relationships between WHOQoL-BREF domains and gender, age, occupation, body mass index (BMI), the clinical classes of the CEAP classification and four different treatment modalities according to guideline were analyzed.

Results: For the WHOQOL-BREF test battery, the patients with CVD had worse values, as compared with the control group participants. The differences were significant for the physical (77.81 ± 12.75 vs. 59.18 ± 12.90, $P < 0.001$), the psychological (74.78 ± 11.37 vs. 60.21 ± 14.70, $p < 0.001$), the social relationships (76.56 ± 13.56 vs. 63.07 ± 21.37, $P < 0.001$) and the environmental (70.27 ± 13.36 vs. 50.16 ± 11.39, $P < 0.001$) health scores. The patients with CVD had worse WHOQoL-BREF scores at initial, compared with the 6-month follow-up scores.

Conclusion: This study shows that in spite of undergoing therapy, the subsequent QoL scores did not improve significantly, indicating that CVD continued to negatively affect the patient's life.

Sunday, July 23, 2017

The Effect of Long Saphenous Vein Stripping on Quality of Life

Purpose: Long saphenous vein (LSV) stripping in the treatment of varicose veins may reduce

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the recurrence of varices but may also increase morbidity rates. The effect of stripping on health-related quality of life (HRQoL) is unknown. The aim of this study was to examine the effect of LSV surgery, with and without successful stripping, on HRQoL.

Methods: This prospective study comprises 102 consecutive patients who underwent varicose vein surgery that included attempted stripping of the LSV to the knee. HRQoL was assessed before surgery and at 4 weeks, 6 months, and 2 years after surgery with the Aberdeen varicose vein severity score (AVSS; disease-specific) and the Short-Form 36 (SF-36; generic). Patients defined as stripped were those in whom complete thigh stripping to the knee was confirmed with postoperative duplex scanning at 2 years. Patients defined as incompletely stripped were those in whom any LSV remnant was found in the thigh after surgery. Deep venous reflux (DVR) was defined as reflux of 0.5 seconds or more in at least the popliteal vein.

Results: Sixty-six of 102 patients (65%) provided complete HRQoL data at all four time points. At baseline, there was no significant difference between patients who were stripped (n = 25) and incompletely stripped (n = 41) in terms of AVSS, SF-36, age, gender, DVR, or CEAP grade. Significantly more patients in the incompletely stripped group underwent surgery for recurrent disease (29/41, 71%, versus 8/25, 32%; P = 0.002, with chi(2) test). Both groups gained significant improvements in AVSS scores for as much as 2 years. After adjustment for recurrent disease, stripping conferred additional benefit in terms of AVSS at 6 months (median [interquartile range]) (9 [4 to 16] versus 15 [9 to 24]; P = 0.031) and 2 years (7 [2 to 10] versus 9 [5 to 15]; P = 0.014), which was statistically significant in patients without preoperative DVR but not significant in patients with preoperative DVR. SF-36 scores were not affected by stripping.

Conclusion: LSV surgery leads to a significant improvement in disease-specific HRQoL for as much as 2 years. In patients without DVR, stripping to the knee confers additional benefit.

Monday, June 26, 2017

Evolution of Practices in Carotid Surgery: From 2006 to 2015

Carotid artery intervention or surgery is less often performed in our hospital for various reasons when compared to the more often performed coronary artery surgery and interventions. Similarly in the last 10 years, this has not changed significantly. In addition the high dose statin therapy and best medical therapies are gaining popular in many hospital. Early initiation of best medical therapies helping the patients to prevent the next event. It is still very difficult to do carotid endarterectomy in the early window period (golden period is less than a week after indexed event TIA) due to many factors which delay the entry of the patient to the operation theater. As the time passes the risk drops and patients also postpone it further.

An observational analysis showed stability in the number of carotid procedures performed during the period and a progressive modification of carotid surgery practices in France, in accordance with the recommendations of learned societies and major publications. We also feel that seems to be fact in many other hospitals.

Reference

1. Salomon du Mont, Lucie, et al. Evolution of practices in carotid surgery: observational study in France from 2006 to 2015.

Smoking Cessation Rates Amongst Patients Undergoing Vascular Surgery

Vascular surgeons and interventionists explain the patients and suggest them to stop smoking in the perioperative period. But some of them fail to stop smoking due to various reasons. Recurrence of the stenotic lesions and thrombosis is known to be higher in such people. In our hospital 25% of the patients stop smoking forever. 50% of patients stop smoking for some time and restart after discharge. 25% of smokers never stop smoking.

Smoking is the single most important modifiable risk factor for patients with vascular disease. A study was done in Canada with an aim to determine prevalence of smoking and

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cessation rates amongst patients undergoing vascular surgery.

Results of that study: Overall 624 patients had complete follow up data. Of these, 209 (33.5%) were smokers presurgically. At 1 year follow up of those 209 patients who were smokers preoperative, 87 (41.6%) had stopped smoking while 122 (58.4%) had not. Patients who were male and aged >70 were more likely to be smokers pre-operatively (P = 0.001 and P < 0 .001="" aged="" cessation="" in="" increased="" rates="" respectively="" those="" were="">70 years (P = 0.005), and in those with COPD (P = 0.016). Gender was also statistically associated, with cessation rates higher in females (P = 0.011).

They concluded by saying that, more than one-third of patients who underwent surgery in a Canadian vascular center continue to smoke.

May be, we should study the outcomes of vascular treatments after improving this difficult habit (smoking cessation) further. We should do a study targeting the smoking habit and then measuring the outcomes of the vascular procedures. The attention is needed in this direction at this hour.

Reference

1. McHugh SM et al. Smoking cessation rates amongst patients undergoing vascular surgery in a Canadian center.

Tuesday, June 20, 2017

Neuromuscular Electrical Stimulation for the Prevention of Venous Thromboembolism

Methods: The Medline and Embase databases were systematically searched, adhering to PRISMA guidelines, for articles relating to electrical stimulation and thromboprophylaxis. Articles were screened according to a priori inclusion and exclusion criteria.

Results: The search strategy identified 10 randomized controlled trials, which were used in three separate meta-analyses: five trials compared neuromuscular electrical stimulation to control, favoring neuromuscular electrical stimulation (odds ratio of deep vein thrombosis 0.29, 95% confidence interval 0.13–0.65; P = 0.003); three trials compared neuromuscular electrical stimulation to heparin, favoring heparin (odds ratio of deep vein thrombosis 2.00, 95% confidence interval 1.13–3.52; P = 0.02); three trials compared neuromuscular electrical stimulation as an adjunct to heparin versus heparin only, demonstrating no significant difference (odds ratio of deep vein thrombosis 0.33, 95% confidence interval 0.10–1.14; P = 0.08).

Neuromuscular electrical stimulation significantly reduces the risk of deep vein thrombosis compared to no prophylaxis. It is inferior to heparin in preventing deep vein thrombosis and there is no evidence for its use as an adjunct to heparin.

Saturday, June 10, 2017

Platinum Age for Rheumatology

On June 14–17, over 14000 rheumatologists, healthcare decade or so, this concept has been inverted. Intensive professionals, and patients will gather in Madrid, Spain, intervention, initiated earlier, with conventional and for the European League Against Rheumatism (EULAR) biological disease-modifying antirheumatic drugs (DMARDs) is increasingly recommended. Annual Congress. 2017 is a particularly special year for the Gerd R Burmester and Janet E Pope, in the second paper organisation as EULAR celebrates its 70th anniversary of the Series, discuss these evolving treatment strategies Since our inception, The Lancet has been pleased to have for rheumatoid arthritis. They emphasise the role of shared in the rich history of rheumatology research, biologics and small molecule inhibitors in the therapeutic including The "Rheumatic Disease", coauthored by arsenal, and review accumulating evidence that supports the founding President of EULAR, Mathius Pierre Weil, an early window of opportunity for diagnosis, as well in 1928 and today's issue, which highlights recent as management regimens, such as treat-to-target and innovative developments in therapeutics and approaches that include rapid intervention, reassessment, management strategies for rheumatic diseases and adjustment of medications for patients who do not Much of the recent knowledge of the underlying achieve remission within 6

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months—with the aim of mechanisms that drive rheumatoid arthritis and other preventing or slowing structural damage. Diseases have come from preclinical studies in cellular. Raising awareness of these new recommendations, systems and animal models. Although important and this year, EULAR launched a new campaign, "Don't delay, essential research tools, these experimental systems do connect today", aimed at patients, general practitioners, not always faithfully reflect human biology.

In the first and specialist rheumatologists alike. Patient involvement paper of a Series on targeted treatments for rheumatoid in research and clinical decision making is a cornerstone arthritis, Iain B McInnes and Georg Schett take a novel of EULAR, exemplified by People with Arthritis and and refreshing approach to understanding the molecular Rheumatism (PARE), one of the pillars of the organisation. pathogenesis of the disease in patients. They review PARE works with researchers to ensure a patient-centred findings from clinical trials of new biologics designed to approach to care at all levels, and with patient advocacy target specific immunological pathways, and critically groups to help to disseminate knowledge across Europe evaluate lessons learned from the success and failure of and to provide education to patients and their families. these studies. By doing so, McInnes and Schett provide The rapid rate at which discoveries have emerged over a comprehensive overview of the roles of key cytokines, the past two decades has brought about a revolution in including tumour necrosis factor α, interleukin 6, and treatment paradigms for rheumatoid arthritis. Many of granulocyte–macrophage colony-stimulating factor. Insights these developments have occurred in parallel with or have gained from use of novel Janus kinase (JAK) inhibitors, helped to inform insights into management of a range which target pathway components downstream of of rheumatoid diseases, as well as other immunologically cytokine receptors, are also discussed in the paper. JAK driven conditions. But the question of the feasibility inhibitors tofacitinib and baricitinib are approved for of implementing early and intensive intervention treatment of arthritis and other rheumatoid diseases. with new biologics in settings other than high-income Knowing which cytokine and signalling pathways to countries remains. The NOR-SWITCH study showed non- target in specific individuals is a huge advance, but for a inferiority for switching from infliximab originator to a complex, progressive, chronic disease such as rheumatoid biosimilar in patients with rheumatoid arthritis, psoriatic arthritis, the timing of intervention is also critical.

Around arthritis, Crohn's disease, and other conditions for which 25 years ago, the recommended treatment approach was infliximab is currently approved. Biosimilars might slow and steady, referred to as "the pyramid"—ie, a base of provide affordable options for treating rheumatism, but physical therapy and non-pharmacological interventions, it remains to be seen how effectively the new treatment followed by conservative treatment with non-steroidal strategies can be implemented on a global scale. anti-inflammatory drugs, then glucocorticoid steroids An unprecedented range of therapeutic options for and, finally, administration of a conventional disease-rheumatic diseases is now available—the modifying antirheumatic drug (DMARD). Over the past to make them accessible.

Diabetic Foot



Infected wound after repeated operations

Infected Neuro-ischemic Foot

very often people think that the diabetic foot is always infection but they forget to recognize the underlying neuropathy as the main cause

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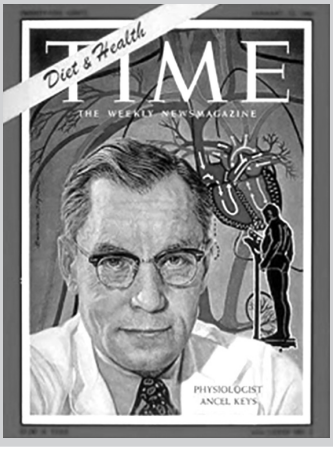
precipitating infections so the surgeons are asked to drain the pus and debride wounds. It is true that all the diabetic foot problems are complicated by infection with 1or 2 other organism.

Diet and Health Both are Important but there is always a Second Opinion.



Friday, June 09, 2017

Intra-aortic Thrombosis and Peripheral Arterial Thrombosis in a Person Taking Antipsychotic Drugs



Angiogram films before and after therapy

This patient was admitted with history of B/L lower limb ischemic pain (subacute) while he was taking antipsychotic medications. Angiogram showed multi segmental thrombosis of the lower limb arteries. He was informed about the options—thrombectomy and medical therapies or combination. He opted for only medical therapies with heparin, prostaglandin E1 therapies. He was given monthly infections of PGE1 and antiplatelet drugs along with other antipsychotic medications. His symptoms disappeared. Now, he is able to walk freely for 2 km and after that he develops calf claudication due to the residual ischemia (popliteal, tibial arterial residual occlusions).

Wednesday, May 31, 2017

Duration of Anticoagulation in Patients who had Thrombosis—are we Sure about it?

The recommended duration of anticoagulation in the venous thromboembolism (VTE) patients is dependent on the persisting risk of re-thrombosis and bleeding. It was noted that in 10 years follow-up after cessation of the anticoagulation nearly 50% of the patients develop a recurrent VTE episode. This indicates that there is hidden risk of thrombosis in these patients. It may be due to underlying known or unknown, old or new risk factors. In these patients may have persistent old factors (of varying intensity) or newly added risk factors. So, in the beginning it was felt that the anticoagulation should be continued even after discharge from the hospital, but they were not sure about the duration. Now, the prophylaxis guidelines recommend us to extend the thrombo-prophylaxis after hip replacement surgery for at least 35 days. Similarly, in the treatment segment also, there was discussion about continuation anti coagulation beyond 6 months after the indexed event. Placebo controlled trials were done and they showed 82% relative risk reduction of VTE (Einstein II). In the recent past (Einstein Choice study) in another study, the anticoagulation was extended for another 1 year to its to study effect on prevention of rec VTE! It was again found that there is benefit of anticoagulation (Relative risk reduction of recurrent VTE up to 60%) without increasing the significant bleeding risk. The relative risk reduction can be as high as 60% with rivaroxaban. That leaves us with a question that is—how far is far enough

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with anticoagulation therapy? Someone can consider giving anticoagulation for 10 years with annual reviews of the risk factors for re-thrombosis and bleeding. This means, we need to use the existing drugs optimally or find out drugs which are effective and safe across all subsets of patients with thrombotic (VTE) complications, for a period of one decade after the indexed event of VTE.

Tuesday, May 02, 2017

Increase in the Incidence of Diabetes and Its Implications.

Diabetes mellitus is among the most prevalent and morbid chronic diseases, affecting the health of millions of persons worldwide. According to the Global Burden of Disease (GBD) report for 2015, the prevalence of diabetes rose from approximately 333 million persons in 2005 to approximately 435 million persons in 2015, an increase of 30.6%. During the same interval, the annual number of deaths from diabetes rose from 1.2 million to 1.5 million. This increase is attributed in the GBD report to population growth and aging, with small decreases in age-specific and cause-specific mortality over the same period.

The investigators examined changes in mortality and the incidence of cardiovascular disease over time. Mortality and the incidence of cardiovascular disease both decreased significantly over the study period. All-cause mortality decreased by 31.4 deaths per 10,000 person-years among persons with type 1 diabetes and by 69.6 deaths per 10,000 person-years among those with type 2 diabetes. The incidence of death from cardiovascular disease decreased by 26.0 deaths per 10,000 person-years among persons with type 1 diabetes and by 110.0 deaths per 10,000 person-years among those with type 2 diabetes. However, the rates of fatal outcomes decreased significantly less among patients with type 2 diabetes than among matched controls.

What is the solution for this increasing prevalence of diabetes and the associated problems! It is clear that we are far from controlling the negative effects of diabetes on health worldwide. As the prevalence increases, we clearly need new approaches to reduce the burden of this disease on public health.

Reference

1. Ingelfinger JR, Jarcho JA. Increase in the Incidence of Diabetes and Its Implications. N Engl J Med. 2017;376:1473-4.

Friday, April 28, 2017

Which one is more Expensive? Is it Thromboprophylaxis or Treatment for VTE?

Sometimes a question is raised about the cost benefit of thromboprophylaxis over the treatment of confirmed VTE in our hospitalized patients. In one study Gualberto Gussoni et al (2013) from Italy showed that the VTE management costs 4 times more than the prophylaxis.

They have examined in-hospital paths of 160 patients with VTE (VTE group) and 160 patients receiving prophylaxis and without VTE (NO-VTE group) retrospectively within 26 internal medicine units in Italy. The total median costs for VTE management were around four-times higher than those for prophylaxis (€ 1,348.68 vs € 373.03). Human resources were the most important cost-driver (55.5% and 65.7% in the VTE and NO-VTE groups), followed by instrumental (24.6% in VTE and 15.5% in NO-VTE) and hematologic tests (12.6% in VTE patients and 13.3% in controls). In the NO-VTE group the direct costs for prophylaxis accounted for 4.5% of total. The real-world data of this study confirm the economic burden of in-hospital treatment of VTE, and the relatively low costs of thromboprophylaxis. A greater adherence to evidence-based protocols for VTE prevention could probably reduce the current financial burden of VTE on healthcare systems.

Tuesday, April 18, 2017

The Post-thrombotic Syndrome after Upper Extremity Deep Venous Thrombosis in Adults

Post-thrombotic syndrome (PTS) is a frequent complication of upper extremity deep venous thrombosis (UEDVT), yet little is known regarding risk factors and optimal management. A standardized means of diagnosis would help to establish better management protocols. The

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impact of upper extremity PTS on quality of life should be further quantified.

Seven studies were reviewed. The frequency of PTS after UEDVT ranges from 7 to 46% (weighted mean 15%). Residual thrombosis and Axillo-Subclavian vein thrombosis appear to be associated with an increased risk of PTS, whereas catheter-associated UEDVT may be associated with a decreased risk. There is currently no validated, standardized scale to assess upper extremity PTS, and little consensus regarding the optimal management of this condition. Quality of life is impaired in patients with upper extremity PTS, especially after DVT of the dominant arm.

In our clinical practice, we generally recommend heparin therapy for the upper limb DVT, which is less expensive and easy to administer. We do not have cost benefit evaluation studies comparing the thrombolytic and heparin therapies for upper limb DVT. It is possible to expect the results of thrombolysis in the upper limb DVT, similar to lower limb DVT. It is also common to see the upper limb DVT in the patients who are on internal jugular vein (IJV) or subclavian catheter for the hemodialysis. In our hospital this aspect of the DVT in the upper limb can be studied further to understand the significance of the PTS in the upper limb DVT associated with central venous catheters.

Reference

1. Elman EE, Kahn SR. The post-thrombotic syndrome after upper extremity deep venous thrombosis in adults: a systematic review. Thromb Res. 2006;117(6):609-14.

Impact of the Initial High Dose of Rivaroxaban on Thrombus Resolution in VTE Patients

Initial heparin therapy followed by oral anticoagulation for 3–6 month has been standard therapy for DVT in many clinics. The recently introduced rivaroxaban, apixaban are given without initial heparin therapy. So, few doctors are still comfortable giving initial heparin therapy and later oral anticoagulation. The question is about the effectiveness of the high dose of rivaroxaban or apixaban given initially? Can resolution of the thrombus in those who received rivaroxaban and apixaban can be comparable to that in patients who received the Inj. heparin?

Bauersachs R et al. (Feb 2017) presented data accumulating on the use of non-VKA oral anticoagulants, such as rivaroxaban. He is of the opinion that these may provide greater thrombus resolution compared with VKAs. Data from the phase III rivaroxaban studies discussed showed that a 21-day intensive dosing regimen of rivaroxaban 15 mg twice daily is effective during the acute treatment phase for VTE, with similar recurrence rates and thrombus resolution to standard anticoagulation.

Probably one may need some more time, studies and availability of the antidote to reverse these drug effects, before he or she can consider recommending the high dose initial therapies of non-VKA oral anticoagulants (NOACs) with more confidence.

Reference

1. Bauersachs R[1], Koitabashi N. Overview of Current Evidence on the Impact of the Initial High Dose of the Direct Factor Xa Inhibitor Rivaroxaban on Thrombus Resolution in the Treatment of Venous Thromboembolism. Int Heart J. 2017;58(1):6-15.

Monday, April 17, 2017

Cardiovascular Disease and Mortality-Is it Changing in Type 1 and Type 2 Diabetes, Now?

It is our hope that the morbidity and mortality should be much less with introduction of many antidiabetic, antihypertensive and anti lipidemic therapies in the past few decades. In one recent study published in the NEJM. org the absolute changes in the incidence rates of sentinel outcomes per 10,000 person-years were observed in the type 1 and type 2 diabetes patients 1998-2012.

Patients with type 1 diabetes had roughly 40% greater reduction in cardiovascular outcomes (CVOs) than controls, and patients with type 2 diabetes had roughly 20% greater reduction than controls. Reductions in fatal

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outcomes were similar in patients with type 1 diabetes and controls, "whereas patients with type 2 diabetes had smaller reductions in fatal outcomes than controls".

This finding of Swedish doctors from 1998 through 2014, mortality and the incidence of cardiovascular outcomes declined substantially among persons with diabetes, although fatal outcomes declined less among those with type 2 diabetes than among controls, makes us think what could be reason for failure to reduce the fatal outcomes more significantly? We have introduced so many new ways to treat these patients medically with drugs and interventions! Why these are adding up to reduce the fatal outcomes! in type 2 diabetes. May be we have not understood the pathophysiology adequately and so the corrective measures are not effective too!

Reference

1. Rawshani A, Rawshani B, Franzén S, et al. Mortality and Cardiovascular Disease in Type 1 and Type 2 Diabetes. N Engl J Med. 2017; 376:1407-18

Is there Risk of Bleeding After Carotid Endarterectomy with Dual Antiplatelet Therapy?

Many of us are concerned about the unexpected bleeding after carotid endarterectomy. Some times suture needle puncture bleeds for a long time after endarterectomy. Some of us assume that this could be more if the patient is on two or more antiplatelet drugs preoperatively. Most of these patients might have already undergone coronary stenting procedures earlier. The cardiologist would like to continue the antiplatelet drugs in perioperative period as there is risk of stent thrombosis in the absence of these drugs. Giulio Illuminati et al recently published their data related to the safety of using dual antiplatelet therapy in the carotid endarterectomy patients. 188 patients received dual antiplatelet drugs (Aspirin 100 mg, Clopidogrel 75 mg) and Inj. LMWH-2000 units BD (till discharge) in the post operative period, started 6 hours after surgery without any complications. There were no postoperative cervical hematomas requiring surgical evacuation. There was one hypoglossal nerve palsy, which regressed within 2 weeks. There was no postoperative mortality and neurologic and cardiac morbidity. This study is too good to believe and I am sure some surgeons will be still apprehensive to use this regimen after carotid endarterectomy in their practice.

Reference

1. Illuminati G, Schneider F, Pizzardi G, et al. Dual antiplatelet therapy does not increase the risk of bleeding after carotid endarterectomy: results of a prospective study. Ann Vasc Surg. 2017;40:39-43.

Real-world Economic Burden of VTE and VTE Prophylaxis in Clinical Practice

It is a general opinion that the treatment of VTE will be more expensive than the prevention of VTE with prophylactic measures. So, there is need to consider the thromboprophylaxis in our patients who are at high risk of VTE to reduce the overall economic burden in the world. In their study, Gussoni G et al noticed that costs for VTE management (the total median) were around four-times higher than those for VTE prophylaxis (€ 1,348.68 vs € 373.03). This means if we follow the evidence-based protocols for VTE prevention, it could limit the current financial burden of VTE on our health budgets. Many clinicians may not feel this net clinical benefit in their small group of patients to get convinced about the larger role of thromboprophylaxis in the healthcare systems.

Reference

Gussoni G, Foglia E, Frasson S, et al. FADOI Permanent Study Group on Clinical Governance. A real-world economic burden of venous thromboembolism and antithrombotic prophylaxis in medical inpatients. Thromb Res. 2013;131(1):17-23.

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Thursday, April 13, 2017

Can Arteriovenous Fistula Precipitate or Worsen Congestive Heart Failure in ESRD Patients going for Initiation of Hemodialysis?

The chronic kidney disease patients are referred to vascular surgeons for creating an arteriovenous fistula for hemodialysis with different types of hidden cardiovascular problems. We have noted that those patients with subclinical congestive heart failure (CHF) are at greater risk of worsening of the cardiac condition after creation of the arteriovenous fistula for hemodialysis. In general, it was observed that patients with CHF and end-state renal disease (ESRD) have poor prognosis. Optimizing the hemodynamics is crucial in both these conditions. Adding the AVF as a third factor in these patients can also make the optimization of hemodynamics more difficult. When an AVF is created, it reduces peripheral resistance, increases the preload and the stroke volume and cardiac output are increased. In 7–10 days the cardiac output is increased by 15–20%, left ventricular end diastolic pressure is increased by 5–10%. The atrial naturietic and brain naturietic factors (ANP, BNP) are elevated. The higher flows through the AVF was not seem to be linked to the incidence of high output failure. The fistula flows will be twice higher in the upper limb than those at the wrist. The upper arm AVF flows (Q_a) will be between 1.13 to 1.72 Lit/min. The fistula flow can be higher than 2 lit/min (Q_a) in 15% of the patients. Generally, the ratio between cardiac output and fistula flow (Q_a) is 22% in the upper limbs. The risk of high output heart failure is high when CO/$Q_a$is more than 40%. It was observed that 17% of the patients developed de novo congestive heart failure in the HEMO study. Median time to develop high output heart failure will be 51 days and it is noted in 40% of the upper limb Brachiocephalic and 8% of the Radiocephalic arteriovenous fistula.

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Vascular Updates

Salient Features

- The book is based on a blog www.apvascular.blogspot.in with the aim to share the clinical material and experiences for doctors
- The book is informative and easily accessible to all those interested to know and learn some of the common and unusual problems in vascular patients
- Compiled with more interesting problems and their management from the author's clinical experiences
- Reviews interesting papers published in the different journals
- Earlier the author published a book out of the tweets posted in his twitter account
- Topics are short and crisp, so that they can be easily read and information can be obtained
- To know more, the reader can go to the blog www.apvascular.blogspot.in and communicate or leave that message. The reader can also register on the blog to obtain regular update if he or she is interested receive them
- The book gives an opportunity to read these small articles whenever there is short time available as there is no need for continuity.



Pinjala Ramakrishna MS FRCSEd FICS is Senior Consultant Vascular Surgeon, Department of Vascular and Endovascular Surgery at Apollo Hospitals, Hyderabad, Telangana, India. Dr Pinjala Ramakrishna started his surgical career at Postgraduate Institute of Medical sciences (PGIMER), Chandigarh in 1981, after graduating from Guntur Medical College, Guntur. At PGIMER, he worked in general surgery, under excellent and eminent surgeons. After completing MS (General Surgery) worked as Surgical Registrar in the general and vascular surgery unit for 2 years in PGIMER. He went to United Kingdom for further surgical training. He obtained Fellowship of Royal College of surgeons of Edinburgh in 1987. He returned to India, to join Nizam's Institute of Medical sciences (NIMS) and started first department of vascular surgery in combined Andhra Pradesh. He worked as Head of the Department of Vascular Surgery at NIMS for 30 years. In the last 30 years, he presented and published on many vascular problems and therapies. He is the past president of Vascular Society of India and Venous Association of India. He has written books on Diabetic Foot for Limb Salvage, DVT a Clinical Problem, Young Smoker and Vascular Disorder, Prostaglandin E-1, Common Vascular Problems, contributed chapters in textbooks such as ASI Textbook of Surgery, RSSDI Textbook of Diabetes, Uncontrolled Diabetes, edited a supplement of JAPI. He delivered prestigious orations such as Godrej Karai oration in Indian Association of Cardiovascular-Thoracic Surgeons. He received awards from Japanese Surgical Society, Asian Society for Vascular Surgery, and Asian Venous Forum. He started vascular surgery DNB course at NIMS and trained general surgeons to become vascular surgeons.

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