

Newsletter



Oct. 2021-Issue 02

NCD EDITORIAL

Dear Doctor,

Greetings to you!!

Welcome to the October edition of the NCD Newsletter.

This time of the year generally sees an increase in our motivation for healthy living. Thus, for nurturing the importance of medical wealth at a regular interval and generosity hidden in the soul of the medical fraternity, we are aiming to unlock the treasure efforts of health professionals. We had circulated over ten thousand copies of NCD- Non-Communicable Disease newsletters across the nation covering information on recent updates of the healthcare industry. The newsletter is an excellent example where every individual strives indefatigably for the respective outcomes.

We are pleased to present to you the "NCD Newsletter" October 2021 edition where we have incorporated more updates on clinical trials, medical devices, approved molecules along with the challenging case study. We did receive a humongous positive response on the previous edition thus as per the request from the few eminent HCPs, we have worked hard to bring up an exhilarating flashback of the inception of the guest articles for your reference.

We have for you, from the heart of medical professionals like you, a wide range of updates, facts and some informative articles.

You are requested to scan the QR code to provide your valuable feedback.

Happy Reading!

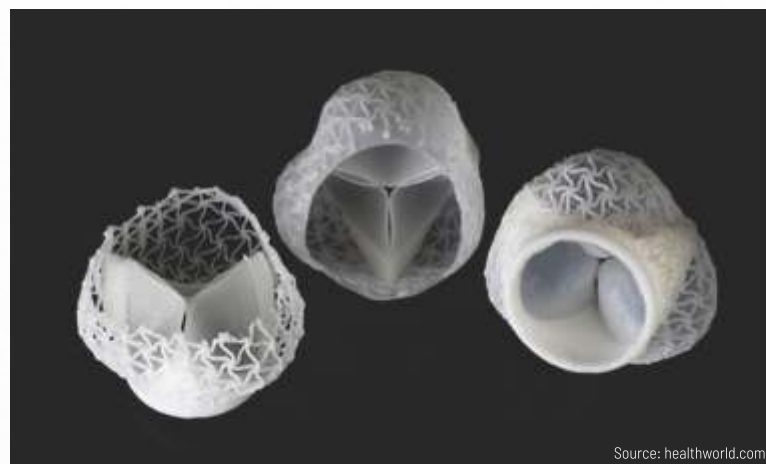
Editor: Dr Amit Gajjar
Aprica Healthcare Ltd.

WHAT IS NEW?

MEDICAL DEVICES: Made in India Drive- 3D printed valves

Dr Cherian (A Chennai based heart surgeon) developed the new 3D printed heart valve in collaboration with the Centre for Automation and School of Mechanical Engineering, Vellore Institute of Technology (VIT), Chennai. They have designed and developed India's first 3D printed heart valve, giving hope to several thousands of patients requiring heart valve replacement surgery every year.

The currently available artificial heart valves are either made of metal components (mechanical), or from animal tissues (bioprosthetic), each with its own disadvantages or complications, such as the risk of blood clot formation, valve failure due to degeneration, valve infection, the need for long-term blood thinner medications, etc.



Source: healthworld.com

The new heart valves developed using 3D printers can overcome these problems related to artificial heart valves. The heart valves were manufactured using specialized biopolymers that are very similar to human tissue, which can be directly implanted in heart patients.

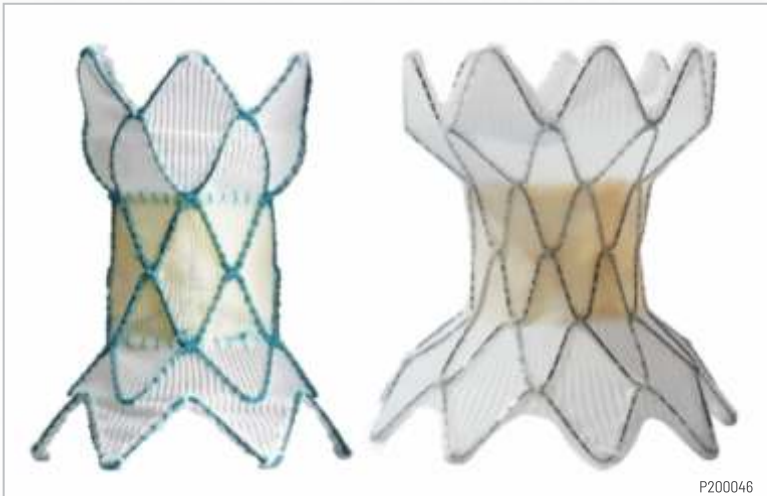
This new 3D printed heart valve could be the future of cardiac surgery, since it overcomes most of the disadvantages/complications associated with the currently available artificial heart valves that are in use today.

Another added advantage of this 3D printed heart valve is that its design was developed using specialized computer-aided design software and a modeling techniques, based on the MRI scan images of the human heart, as a result of which, we are now able to customize and 3D print heart valves that will fit exactly to the dimensions of the patient's heart" said Cherian.

Especially since it is "Made in India", the cost of this novel heart valve could be much lower than that of the imported heart valves that are currently used in India, he noted. Cherian aims to patent this 3D printed heart valve, and test it to confirm its biocompatibility, efficacy and durability.



Medtronic Harmony Transcatheter Pulmonary Valve (TPV) System



Product Name: Harmony Transcatheter Pulmonary Valve System
PMA Applicant: Medtronic, Inc.
USFDA Approval Date: March 26, 2021

The Harmony Transcatheter Pulmonary Valve (TPV) system is used to treat a leaky native or surgically repaired right ventricular outflow tract (RVOT; the part of the heart that carries blood to the lungs). The Harmony TPV system consists of a transcatheter pulmonary valve and a delivery catheter. The transcatheter pulmonary valve is made of pig heart tissue and is attached to a flexible, self-expanding nickel-titanium (Nitinol) wire frame for support.

The doctor inserts the catheter through a blood vessel (vein) in the groin or in the neck to reach the right side of the heart. The catheter is then placed into position within the RVOT. The TPV is then released from the catheter allowing it to expand on its own and anchor to the RVOT. Once the TPV is in place, it opens and closes like a door to force the blood to flow in the correct direction out of the heart to the lungs.

The Harmony TPV is used to treat pediatric and adult patients who have severe pulmonary regurgitation (blood leaking backward into the right lower chamber of the heart) associated with their native or surgically repaired RVOT, a condition that often results from congenital heart disease.

The Harmony TPV is intended to improve blood flow to the lungs in patients with severe pulmonary regurgitation without open-heart surgery, which is the current standard of care. The use of the Harmony TPV may delay the time before a patient needs additional open-heart surgery. It can also potentially reduce the total number of open-heart surgeries required over an individual's lifetime. In a clinical study, about 89 out of every 100 patients treated with the Harmony TPV System had acceptable pulmonary valve function at six months without needing another medical procedure on their pulmonary valve.

CONTRAINDICATIONS:

- Have an infection in the heart or other area in the body
- Cannot tolerate blood thinning medicines
- Have sensitivity to Nitinol (Titanium or Nickel)

Source: USFDA Medical Devices Approval, fda.gov; Accessed on 15 Sep 2021

Prevent Millions of Deaths each year with Salt swapping

High levels of sodium intake and low levels of potassium intake are widespread, and both are linked to high blood pressure and greater risks of stroke, heart disease and premature death. Using a salt substitute—where part of the sodium chloride is replaced with potassium chloride—addresses both problems at once. Salt substitutes are known to lower blood pressure but their effects on heart disease, stroke, and death were unclear, until now.

Replacing table salt with a reduced-sodium, added-potassium 'salt substitute' significantly reduces rates of stroke, heart attack and death, according to the results of one of the largest dietary intervention studies

ever conducted. Presented at a 'hotline session' at the European Society of Cardiology Congress in Paris on August 29, and simultaneously published in the New England Journal of Medicine, the results also showed that there were no harmful effects from the salt substitute.

The Salt Substitute and Stroke Study enrolled 21,000 adults with either a history of stroke or poorly controlled blood pressure from 600 villages in rural areas of five provinces in China—Hebei, Liaoning, Ningxia, Shanxi and Shaanxi between April 2014 and January 2015.

Participants in intervention villages were provided enough salt substitute to cover all household cooking and food preservation requirements—about 20g per person per day—free-of-charge. Those in the other villages continued using regular salt. During an average follow up of almost five years, more than 3,000 people had a stroke. For those using the salt substitute, researchers found that stroke risk was reduced by 14 percent, total cardiovascular events (strokes and heart attacks combined) by 13 percent and premature death by 12 percent.

Last year, a modeling study done for China suggested that about 400,000 premature deaths might be prevented each year by the national uptake of salt substitute. If salt was switched for salt substitute worldwide, there would be several million premature deaths prevented every year.

SUMMARY POINTS

- Salt manufacturers and retailers worldwide should switch to producing and marketing salt substitute at scale
- Governments worldwide should design policies to promote salt substitute and discourage regular salt use
- Consumers worldwide should cook, season and preserve foods with salt substitute, not regular salt

Source: Medicaexpress.com

Unturned pages in Covid-19 and Diabetes

At 18 months into the COVID-19 pandemic, many of the direct and indirect effects of SARS-CoV-2 on people with diabetes have become clearer, but knowledge gaps remain, say epidemiologists. COVID-19 has had a devastating effect on the population with diabetes, and conversely, the high prevalence of diabetes and uncontrolled diabetes has exacerbated the problem. As it becomes clear that the COVID-19 pandemic will be with us in different forms for the foreseeable future, the emphasis for people with diabetes needs to be continued primary care, glycemic management, and vaccination to reduce the long-term impact of COVID-19 in this population.

People with diabetes are more than three times as likely to be hospitalized for COVID-19 than those without diabetes, even after adjustment for age, sex, and other underlying conditions. Diabetes also accounts for 30%–40% of severe COVID-19 cases and deaths. Among those with diabetes hospitalized for COVID-19, 21%–43% require intensive care, and the case fatality rate is about 25%.

In one of the few multivariate analyses that examined type 1 and type 2 diabetes separately, conducted in the UK, the odds of in-hospital COVID-19-related deaths compared with people without diabetes were almost three times higher (odds ratio 2.9) for individuals with type 1 diabetes and almost twice as high (OR 1.8) for those with type 2, after adjustment for comorbidities.

Elevated glucose is clear risk factor for Covid-19 severity

Elevated A1c was identified among several other overall predictors of poor COVID-19 outcomes, including obesity as well as comorbid kidney and cardiovascular disease.

High blood glucose levels at the time of admission in people with previously diagnosed or undiagnosed diabetes emerged as a clear predictor of worse outcomes. For example, among 605 people hospitalized with COVID-19 in China, those with fasting plasma glucose 6.1–6.9 mmol/L (110–125 mg/dL) and ≥ 7 mmol/L (126 mg/dL) had odds ratios of poor outcomes within 28 days of 2.6 and 4.0 compared with FPG <6.1 mmol/L (110 mg/dL).

Population-based studies in the UK found that A1c levels measured months before COVID-19 hospitalization were associated with risk for intensive care unit admission and/or death, particularly among those with type 1 diabetes.

Overall, the death rate was 36% higher for those with A1c of 9%–9.9% vs 6.5%–7%.

Evidence gaps identified

Extensive information is needed to determine whether exposure, infection, and hospitalization risks differ by diabetes status, and how those factors affect outcomes. The same studies would also be important to identify how factors such as behavior, masking and lockdown policies, risk factor control, and household/community environments affect risk in people with diabetes.

Studies are needed to better understand the indirect effects of the pandemic, such as care and management factors. Some of these, such as the advent of telehealth, may turn out to be beneficial in the long run.

Many of the most important unanswered questions lie in the potential indirect and long-term impact of the pandemic that requires population-based studies. Most of our knowledge so far is from case series, which only assess patients from the time of hospitalization.

Source: Diabetes Care 2021 Sep; 44(9): 1916–1923.

The Challenge of Patient Adherence and Non-Compliance

Lack of patient compliance is a significant barrier to effective medical treatment. It is the patient's failure to follow the recommendations of his or her physician or other healthcare provider. Patient nonadherence (sometimes called noncompliance) can take many forms; the advice given to patients by their healthcare professionals to cure or control disease is too often misunderstood, carried out incorrectly, forgotten, or even completely ignored.

Nonadherence carries a huge economic burden. Yearly expenditures for the consequences of nonadherence have been estimated to be in the hundreds of billions of US dollars. Estimates of hospitalization costs due to medication nonadherence are as high as \$13.35 billion annually in the US alone. In addition to the most obvious direct costs, nonadherence is also a risk factor for a variety of subsequent poor health outcomes, including as many as 125 000 deaths each year.

Research during the past several decades indicates that, depending upon their conditions and the complexity of the regimens required, as many as 40% of patients fail to adhere to treatment recommendations

When preventive or treatment regimens are very complex and/or require lifestyle changes and the modification of existing habits, nonadherence can be as high as 70%. Although patients with HIV/AIDS may be highly motivated to adhere, their medication regimens are particularly complex, often involving multiple drug "cocktails"

Studies exploring simple versus complex dosing schedules have found that adherence falls off appreciably when regimens become more complicated and affect patients' lifestyles. For example, the number of medications to be taken per day can have a significant influence, with adherence rates dropping to as low as 20% among patients who must take thirteen or more pills each day.

In one study of patients with hypertension, adherence to a thrice-daily medication regimen was only 59% compared with about 84% for a once-daily regimen. In another study involving a physical therapy exercise regimen, only 35% of patients adhered fully; 76% followed their prescribed regimen partly but not wholly. Such programs, of course, tend to be more successful in supervised rather than home-based programs.

When physicians erroneously assume that their patients have taken prescribed medication(s), they may make inappropriate medication and/or dosage changes, which can then result in further complications and suboptimal health outcomes. Thus, not only do nonadherent patients fail to benefit from effective medication, they also risk being harmed by less-than-ideal medication and dosage choices.

Thus, it is clear that nonadherence often results in a combination of wasted medical care costs, wasted time and energy for patients and healthcare providers alike, and frustration and dissatisfaction for all interactants.



Imagine him being your patient (#Moneyheist)

Factors that affect adherence

Cognitive factors

It goes without saying, perhaps, that patients must understand what they are supposed to do before they can follow medical recommendations. Thus, patients' health literacy is central to their ability to adhere.

Economic factors

Receiving a prescription but not filling it is still considered to be the foremost factor for patient not meeting compliance. Due to economical condition of patient, they are not filling the prescribed dose of medicines. This is because they lack the knowledge regarding disease and treatment course, hence they prioritize the other things over purchasing the medications.

Interpersonal factors

The interpersonal dynamics of the physician–patient relationship play an important role in determining a variety of patient outcomes including patient adherence to their treatment recommendations. Patients who feel that their physicians communicate well with them and actively encourage them to be involved in their own care tend to be more motivated to adhere.

Patient involvement and participatory decision making

Studies have found that both patient satisfaction and patient adherence are enhanced by patients' involvement and participation in their care. The behavior of physicians and patients tends to be reciprocal when they strive toward partnership. Patients who want to be more involved tend to ask more questions and display more confidence, and physicians who are willing to sustain collaborative relationships with their patients tend to act in ways that prompt their patients to be involved and active.

Patients' attitudes

Patients' understanding of their recommendations and good physician–patient relationships are, of course, not sufficient to eliminate the risk of nonadherence. Patients' attitudes, beliefs, and group norms all influence adherence in meaningful and sometimes complex ways.

Cultural variations

In addition to attitudes and sociocultural norms, patients' perceptions of their physicians are also very good predictors of patients' intentions to adhere.



Central Drugs Standard Control Organization
 Directorate General of Health Services
 Ministry of Health & Family Welfare
 Government of India

CDSO DRUG APPROVAL

Name of Drug	Indication	Dose/ Strength	Date of approval
Cangrelor tetra sodium bulk and Cangrelor for injection 50mg /vial	Indicated as an adjunct to percutaneous coronary intervention (PCI) to reduce the risk of periprocedural myocardial infarction (MI), repeat coronary revascularization, and stent thrombosis (ST) in patients who have not been treated with a P2Y12 platelet inhibitor and are not being given a glycoprotein IIb/IIIa inhibitor	50mg/vial	21 Jun 2021
Cetilistat bulk and Cetilistat 120 mg tablets	For the treatment of Obesity (limited to patients with both type 2 diabetes mellitus and dyslipidaemia, and with a BMI ≥25 kg/m ² inspite of dietary treatment and /or exercise therapy)	120 mg tablet	09 Jul 2021

Improving Patient Adherence

The first step toward improving patient adherence involves accurately assessing whether or not patients have followed the treatments recommended to them. The precise estimation of patient adherence is not easy, and a full understanding of whether and why any given patient chooses and is able to adhere is often elusive.

Physicians are typically not well informed about their patients' adherence, and reliance upon their own intuition or upon attempts to "catch" their patients in nonadherence can be quite problematic.

Patients tend to be truthful in their adherence reports only when they feel free to admit adherence difficulties without the risk of criticism and in the context of true partnership with their physicians.

Patients need to be given the opportunity to tell their stories and to present their point of view to the physician. From this, much information about patients' beliefs, attitudes, subjective norms, cultural contexts, social supports, and emotional health challenges (particularly depression) can be learned.

No single intervention strategy can improve the adherence of all patients. Success depends upon tailoring interventions to the unique characteristics of patients, disease conditions, and treatment regimens. Participation, engagement, collaboration, negotiation, and sometimes compromise enhance opportunities for optimal therapy in which patients take responsibility for their part of the adherence equation. These partnerships foster greater patient satisfaction, improved patient adherence, and ultimately optimal healthcare outcomes.

SUMMARY POINTS

- Research during the past several decades indicates that depending upon their conditions and the complexity of the regimens required, as many as 40% of patients fail to adhere to treatment recommendations
- When preventive or treatment regimens are very complex and/or require lifestyle changes and the modification of existing habits, nonadherence can be as high as 70%
- Assessment of the economical condition of the patient and prescribing the alternative/economical treatment along with counseling will increase benefits for better pharmacotherapy.



Source: Ther Clin Risk Manag. 2005 Sep; 1(3): 189-199

PRODUCT UPDATE

Clinical trial registered for Dapagliflozin in myocardial infarction

DAPA-MI

DAPA-MI (DAPAgliflozin effects in patients without diabetes with Myocardial Infarction) is an international, multi-center, double-blinded registry-based randomised controlled trial designed to assess the efficacy and safety of Dapagliflozin 10mg, compared to placebo, given once daily to reduce the risk of hHF and CV disease in adults without T2D following an acute MI.

DAPA-MI integrates traditional, pragmatic, and innovative study design elements with the goal of minimizing patient and investigator burden while producing real world evidence of efficacy that adds to the existing body of evidence generated by Dapagliflozin randomized controlled trials. The trial will recruit around 6,400 patients from approximately 50 sites in Sweden and 50 sites in the UK. Prospective data collection is done through two national CV disease quality registries.

Dapagliflozin-entered in ESC for HF treatment

New guidelines from the European Society of Cardiology recommend addition of SGLT inhibitors to standard of care for patients with acute and chronic heart failure.

Guidance underscores the benefits of SGLT inhibitors in significantly reducing risk of death due to cardiovascular causes or heart failure hospitalization.

SGLT inhibitors have been given a Class IA recommendation- the strongest endorsement- in updated clinical practice guidelines released by the ESC Heart Failure working group in the EU at its annual meeting, the ESC Congress 2021

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PICO ANALYSIS

Data on vildagliptin and vildagliptin plus metformin combination in type-2 diabetes mellitus management.

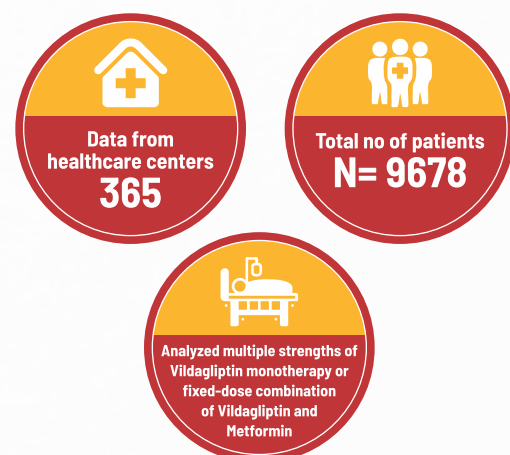


Data on vildagliptin and vildagliptin plus metformin combination in type-2 diabetes mellitus management

Sambit Das¹, A K Gupta², Biplob Bandyopadhyaya³, B Harish Daria¹, Vivek Arya², Mahesh Abhyankar⁴, Santosh Revankar⁵

Patients:

This is a retrospective, multi-centric, observational real-world study conducted across 365 Indian healthcare centers, analyzing data of 9678 adult patients with T2DM who had received vildagliptin alone or as an add-on to metformin therapy.



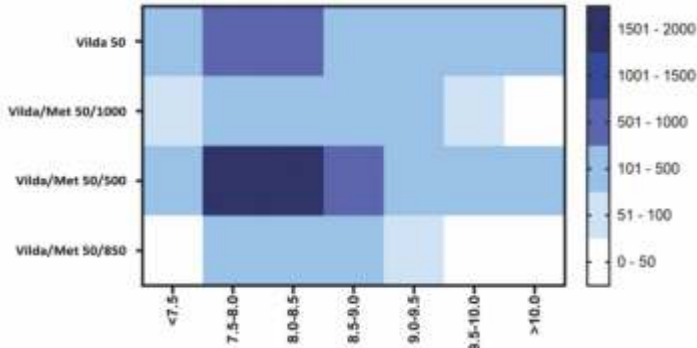
Median duration of treatment (vildagliptin alone or in combination with metformin therapy) - 24 months

Intervention and Comparison:

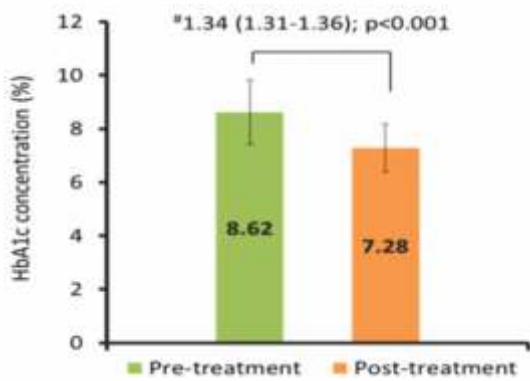
- Group A: Vildagliptin 50 mg
- Group B: Vildagliptin and Metformin 50/1000 mg
- Group C: Vildagliptin and Metformin 50/500 mg
- Group D: Vildagliptin and Metformin 50/850 mg



Outcomes: The study outcomes included the evaluation of change in glycated hemoglobin (HbA1c) levels and weight changes after the treatment with vildagliptin alone or in combination with metformin therapy of various strengths.



The trend of vildagliptin monotherapy or vildagliptin and metformin combination dosage with respect to HbA1c levels.



Mean change in HbA1c levels from pretreatment to post treatment.

Patients with weight changes during the therapy

Weight (Kg)	Number of patients having Weight Gain	Number of patients having Weight Loss
0-2	1101 (21.3)	2638 (50.9)
2-4	455 (8.8)	754 (14.6)
>4	68 (1.3)	159 (3.1)

Results:

1. The treatment with vildagliptin monotherapy or vildagliptin and metformin combination therapy significantly reduced the mean HbA1c levels by 1.34% compared with Pre-treatment.
2. Fasting plasma glucose (45.4%) and postprandial plasma glucose (35.2%), low risk of hypoglycemia (49.8%) achieved through vildagliptin monotherapy or vildagliptin and metformin combination therapy
3. There was weight neutrality seen with vildagliptin treatment. (46.6%) patients experienced no change in body weight during treatment.

SUMMARY POINTS

- Vildagliptin with or without metformin was an effective therapy in reducing HbA1c that helped in achieving target glycemic control.
- It was well tolerated in Indian patients with the T2DM continuum.
- The use of vildagliptin therapy in patients with comorbidities (hypertension and dyslipidemia), complications (peripheral neuropathy, CAD, nephropathy, and retinopathy), different age groups (younger to elderly patients), and physician suggests wide use of vildagliptin for each subgroup of the diabetic continuum.

Reference: Bioinformation. 2021; 17(3): 413-423

MEDICAL CONCEPTS IN HINDI (MCH)

मित्रों, यह एक अभिनव प्रयास है, माडर्न मेडिकल साइंस को अपनी मातृभाषा हिंदी में सरल एवं सहज रूप में प्रस्तुत करने का। यह medical professionals एवं general public, दोनों के लिये उपयोगी है।

Medico के रूप में register करने पर आप medical education एवं health education materials, दोनों को देख सकेंगे।

Undergraduate medical students के लिये इसमें सरल भाषा में, दैनिक जीवन में दिखने वाले उदाहरणों से युक्त texts विस्तार से लिखे गये हैं जिससे उनको तथ्यों को सहजता से समझने में मदद मिले। इसी प्रकार videos में कठिन विषयों को graphics के माध्यम से सरलतापूर्वक समझाया गया है।

Postgraduate resident doctors के लिये case studies एवं विस्तृत videos शामिल किये गये हैं।

Medical practitioners के लिये medical guidelines के अनुसार evidence based approach को विस्तार से clinical cases के माध्यम से videos में समझाया गया है। इनका उद्देश्य मेडिसिन के प्रैक्टिकल पहलुओं को समझाना है जो क्रमशः हमारी प्रचलित CMEs से बाहर होते जा रहे हैं।

MCH के health education section में आप अपने रोगियों की counseling कैसे करें, इस विषय पर अनेक विशेषज्ञों के विविध प्रकार के videos से लाभ उठा सकते हैं।

आप अपने मरीजों, परिजनों एवं संबंधियों को भी इस एप को Public के रूप में register करा सकते हैं जिससे वह health education से संबंधित जानकारियों का लाभ उठा सकें।

MCH के Online Programs को नियमित रूप से ज्वाइन करने के लिये आप 9212657372 पर अपना नाम, योग्यता एवं शहर लिख कर Whatts App कर सकते हैं।

सभी गतिविधियां पूर्ण रूप से निशुल्क है।

MCH app install करने के लिये इस Link को क्लिक करें Mobile App:



Dr. Pankaj Agarwal
MD (Medicine), DM
(Endocrinology)
Ghaziabad

Case Study - Management of a Difficult-to-Treat Diabetic Foot Wound Complicated by Osteomyelitis

History

A 51-year-old Saudi male patient was presented to our outpatient Department at KAUH in March 2018, complaining of a 2-month history of ulcer. He had known uncontrolled type 2 diabetes mellitus for 26 years, dyslipidemia, and ischemic heart disease. He was obese and a known smoker for a couple of years. The ulcer was located at the distal left leg posteriorly. His wound might have started after trauma to his foot was sustained while climbing downstairs at work. He then noted a foul smell and discharge from a small ulcer that progressively got bigger during the last two months. The ulcer continued to discharge minimal amounts of fluid and pus despite different medical interventions, traditional herbal treatments, and oral antibiotics. He reported no fever, chills, sweating, malaise, rest pain, or intermittent claudication. He also denied weight loss, loss of appetite, night sweats, and other systemic manifestations.

Examination

During the general examination, the patient was alert and oriented. He was morbidly obese (BMI 51.4kg/m²). His vital signs were stable, and he was afebrile. On focus examination, the patient was found to have two ulcers; one ulcer was actively infected located at the distal left leg posteriorly around 5cm from the heel and measured about 3cm in diameter. It was circular with punched out edges, regular margins surrounded by erythematous skin with a necrotic floor with visible necrotic Achilles tendon. Visible signs of active local infection were noted, and it was the main reason for the clinic visit. The second ulcer was located posteriorly, on the heel of the left foot, 2cm in diameter, black in color, was superficial and dry, circular with a regular margin, and with no signs of inflammation or infection.

Both lower limbs were dry and scaly (xerosis). Positive signs of trophic changes, brittle nails, and loss of hair were also observed. The vascular exam was fair. Capillary refilling was less than 2 seconds, and palpable distal pulses (dorsalis pedis and posterior tibial) were noted. The neurological exam showed bilateral neuropathic feet with the loss of protective sensation as demonstrated by proprioception and vibration testing using a 10g monofilament (Semmes-Weinstein monofilament (SWM)). Furthermore, subluxation of the left ankle joint with a good passive range of motion was noted.

Wound presentation



Provisional Clinical Diagnosis

The patient was provisionally diagnosed with localized deep tissue infection and abscess formation resulting in rupture of the Achilles tendon of the left lower limb.

Hospital Course

Once the patient was presented to the clinic, treatment was started with local management, including debridement of sloughed soft tissue and irrigation; moreover, treatment with an empirical broad-spectrum antibiotic after wound cultures were obtained, in addition to all routine laboratory tests and X-ray images. His hemoglobin A1c was 11.38mmol/L, urea (BUN) 6.5mg/dL, Hb 10.9g/dL, random glucose 19.2 mmol/L, C-reactive protein 28.7mg/L, and WBC /L. Initial foot and ankle X-ray was normal. He was referred to an endocrinologist to have better control of his blood sugar and to a plastic surgeon and orthopedic surgeon to have a multidisciplinary team approach.

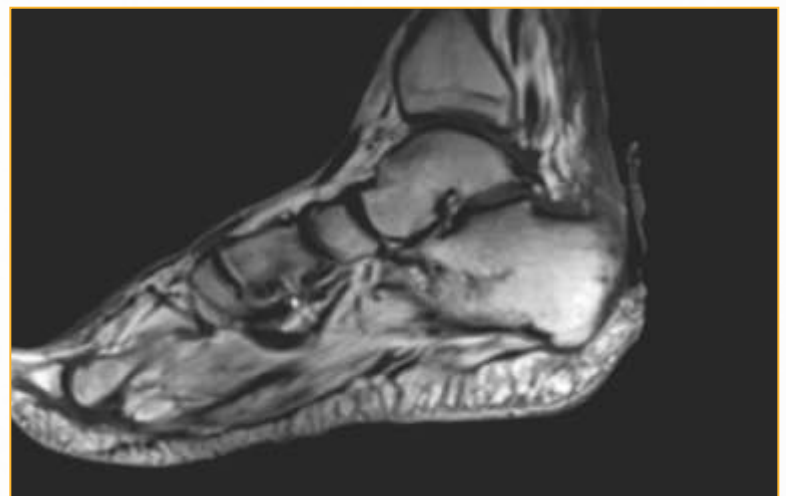
The patient's wound was dressed with a silver-containing dressing material to control his infection and wound discharge. The other wound was cleaned using normal saline and was dressed with iodine to keep the wound dry. He was followed up in the wound clinic. The dressing was changed every other day until culture results were released, and antibiotic was administered based on culture sensitivity. The first ulcer on the posterior left leg completely healed within 6 months. The other ulcer on the heel of the posterior left foot that progressively increased in size to up to 6cm in diameter had part of the calcaneus exposed. subluxation of the left ankle joint with a good passive range of motion was noted.

Foot and ankle X-ray

showed osteopenia, cortical loss, and periosteal reaction. Foot and ankle magnetic resonance imaging (MRI) showed an abnormal cortical enhancement of the posterior aspect of the calcaneus adjacent to the insertion of the Achilles tendon, overlying the wound, and associated with the posterior calcaneal cortical disruption. An enhancing rim indicating a collection was noted in the myotendinous junction of the Achilles tendon measuring approximately cm. Degenerative changes were noted in the calcaneonavicular and tarsal joints. These findings were observed with osteomyelitis of the calcaneus



Distal wound progressively increasing in size.



The patient underwent multiple sessions of excisional debridement of the soft tissue and bone from the left foot. Moreover, medical team performed excisional debridement of the bone using a Volkmann bone curette. The patient was then started on negative pressure wound therapy (125mmHg, continuous mode) for seven days. Improvements in wound healing were noticeable.



NPWT application



Granulation tissue developed after VAC.

The wound was seen by the plastic surgery team and planned for coverage using a split-thickness skin graft, which later failed after one week due to infection, although culture before the procedure was negative.



Failed skin graft after application.



Nanoflex powder application.

Lastly, Nanoflex powder (Altrazeal, Uluru, Inc., Addison, Texas, United States) was applied to the entire bed of the clean moist wound to form a thin, uniform layer; a spatula used to create an even matrix, and then saline was poured to accelerate dressing transformation. Finally, the wound was covered with a transparent film dressing, leading to complete wound healing within one month of treatment (Figure 10). Nanoflex powder was reapplied on the wound every 3-5 days for a month.

The patient was referred again to an orthopedic surgeon for fixing his ankle joint; however, he was not fit for Achilles tendon repair due to his general health condition, including morbid obesity, uncontrolled medical issues, and local causes such as a history of osteomyelitis. Therefore, a rigid ankle brace was used to stabilize his ankle



Wound completely closed after Nanoflex powder.



Rigid ankle brace was used to stabilize the ankle.



Lateral View



Oblique View



Anteroposterior View

HEALTHY LIVING

Lack of Exercise Worse than Smoking, Diabetes, and heart disease

It is well known that exercise can be beneficial for overall health and wellness. It is linked to better physical and mental health and can help to prevent or delay heart disease, strokes, certain types of cancer, and diabetes. What is perhaps less known is that not being active can be harmful to your health. This lifestyle, called sedentary, has been linked to a number of preventable diseases.

Researchers wanted to assess the impact of a sedentary lifestyle on all-cause mortality. The study, published in JAMA, suggests that a sedentary lifestyle has a larger impact on our health than previously thought.

About the study

The retrospective cohort study included 122,007 participants at an academic medical center. The mean age of the participants was 53 years and they were 59% male. Among these, 13,637 died during the study.

The study followed participants for median of 8.4 years. Their physical fitness was measured using exercise treadmill testing and they were arranged by age and gender into the following performance groups:

- Low-less active than 25% of participants
- Below average-less active than 49% of participants
- Above average-more active than at least 50% of participants
- High-more active than at least 75% of participants
- Elite-more active than almost 98% of participants

The study found that death from any cause was lowest among elite category. Death rates were highest among those in low category. It also found that the increase in risk of death linked to sedentary behavior was equal to or greater than the risk of death from smoking, diabetes, and heart disease.

HOW DOES THIS AFFECT YOU?

Cohort studies are observational studies. These studies simply observe events as they unfold, but do not interfere or introduce factors that can affect the outcome. While they can't show direct cause and effect, they can show a possible link between two factors. A large number of studies have found that sedentary behavior affects health, however this is the first that showed it may be as significant as smoking, diabetes, or heart disease.

If you are sedentary, start moving. Make changes in small increments to help you adjust. Work toward at least 150 minutes a week of moderate intensity aerobic activity. Here are some tips to help you get started:

- Start with short episodes of activity. Try doing 3-4 bouts of walking for 10 minutes at a time, spread throughout the day.
- Try out different activities to see which work best for you.
- Look for opportunities to move during the day. Take stairs instead of the elevator, park a little further away, or walk instead of taking your car. Little bits can add up and help you reach longer goals.

If you are already active, keep it up! Make sure to schedule activities into your daily routine.

Resources

Centers for Disease Control and Prevention : <http://www.cdc.gov>

Family Doctor-American Academy of Family Physicians: <https://www.familydoctor.org>

SUMMARY

In said case, the patient continued using the powder dressing after discharge. The wound was checked continuously every week at the time of dressing change, and Nanoflex powder was applied every 3-5 days for nearly 1 month. Interestingly, the dead space kept decreasing in size during consecutive visits, with infiltrating granulation tissue. Complete wound healing was seen within a month. However, the patient had 10 months of treatment, starting from first presentation until the last follow-up. He was admitted to the hospital thrice, and each time, for less than 2 weeks. So, the total hospital stay was about 36 days.

The case highlights a complicated ulcer on the heel that started secondary to a simple trauma and went unnoticed because of underlying neuropathy caused, in part, by associated comorbidities, long-term medication noncompliance, and poor glycemic control. This case would have likely led to leg amputation; however, due to the collaborative effort of the management team who used different modalities of care and wound management, amputation could be avoided after treatment of the patient's osteomyelitis.

CONCLUSION

We present this case to highlight the positive outcomes that could result when a multimodal approach is used to treat a complicated wound. A multidisciplinary holistic team approach is required to treat a diabetic ulcer. Besides, the use of different modalities and debridement sessions should be done after optimizing the general medical condition of the patient, including nutritional status and reasonably good glycemic control.

Source: Maram Alkhatieb, Hatan Mortada, Hattan Aljaaly, "Management of a Difficult-to-Treat Diabetic Foot Wound Complicated by Osteomyelitis: A Case Study", Case Reports in Surgery, vol. 2020, Article ID 3971581, 7 pages, 2020.

SOME INTERESTING FACTS

1. You typically only breathe through one nostril at a time

You actually inhale and exhale through one nostril at a time, according to definitive research published in the journal Mayo Clinic Proceedings in 1977. Every few hours, the active nostril will take a break and the other one will take over until they ultimately switch back again.

2. Anxiety can make bad smells even worse

Speaking of your nose, a 2013 study published in The Journal of Neuroscience examined the way certain emotions affect your sense of smell. After exposing subjects to anxiety-inducing images like car accidents and war, researchers found that neutral scents became unpleasant and bad smells became even worse.

3. Men are more forgetful than women

Numerous studies dedicated to comparing the memory abilities of men and women consistently prove that men are more forgetful than women. One 2015 study published in The Quarterly Journal of Experimental Psychology hypothesizes that this could be due to the varying brain structures of men and women—specifically, that the hippocampus (the part of the brain associated with memory) begins to decrease in volume faster in men than in women.

4. Eating eggs improves your reflexes

Eggs contain an amino acid called tyrosine, which the body synthesizes into norepinephrine and dopamine, compounds that increase energy and alertness and improve mood. In a 2014 study published in the journal Neuropsychologia, researchers even found that tyrosine enhances our response time and improves our intellectual performance, not unlike a medical stimulant like Ritalin or Modafinil

5. The scent of apples can ease claustrophobia

Smelling a green apple can change your perception of space, making rooms feel larger than they really are. Hirsch conducted a 1995 experiment on the subject and during this study, he also found that cucumbers have a similar effect, while the smell of barbecue smoke has the opposite effect.

6. The average adult spends more time on the toilet than they do exercising

According to a 2017 study by British non-profit UKActive, adults spend an average of 3 hours and 9 minutes on the toilet each week, compared to around 1 hour and 30 minutes being physically active during that same time span.

7. Taking pictures messes with your memory

One 2018 study published in the Journal of Applied Research in Memory and Cognition tested the effects of photo-taking on memory by asking students to remember a series of paintings in three situations: with no camera, with a camera, and with a Snapchat-like app where photos disappear. Researchers found that those who took pictures always had a harder time remembering the details of the painting, regardless of whether the photo was permanently stored.

Source:

2008 physical activity guidelines for Americans Summary. Office of Disease Prevention and Health Promotion website.

Available at:

<https://health.gov/paguidelines/guidelines/summary.aspx>. Accessed October 25, 2018.

Mandsager K, Harb S, et al. Association of cardiorespiratory fitness with long-term mortality among adults undergoing exercise treadmill testing. JAMA Netw Open. 2018;1(6):e183605.

Available at:

<https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2707428?resultClick=3>. Accessed October 25, 2018.



ICC T20 WORLD CUP 2021 SCHEDULE



DATE	DAY	TIME	MATCH	GROUP	VENUE
23 Oct	Sat	15.30	Australia Vs South Africa	Super 12- Grp 1	Abu Dhabi
23 Oct	Sat	19.30	England Vs West Indies	Super 12- Grp 1	Dubai
24 Oct	Sun	15.30	A1 Vs B2	Super 12- Grp 1	Sharjah
24 Oct	Sun	19.30	India Vs Pakistan	Super 12- Grp 2	Dubai
25 Oct	Mon	19.30	Afghanistan Vs B1	Super 12- Grp 2	Sharjah
26 Oct	Tue	15.30	South Africa Vs West Indies	Super 12- Grp 1	Dubai
26 Oct	Tue	19.30	Pakistan Vs New zealand	Super 12- Grp 2	Sharjah
27 Oct	Wed	15.30	England Vs B2	Super 12- Grp 1	Abu Dhabi
27 Oct	Wed	19.30	B1 Vs A2	Super 12- Grp 2	Abu Dhabi
28 Oct	Thu	15.30	Australia Vs A1	Super 12- Grp 1	Dubai
29 Oct	Fri	15.30	West Indies Vs B2	Super 12- Grp 1	Sharjah
29 Oct	Fri	19.30	Afghanistan Vs Pakistan	Super 12- Grp 2	Dubai
30 Oct	Sat	15.30	South Africa Vs A1	Super 12- Grp 1	Sharjah
30 Oct	Sat	19.30	England Vs Australia	Super 12- Grp 1	Dubai
31 Oct	Sun	15.30	Afghanistan Vs A2	Super 12- Grp 2	Abu Dhabi
31 Oct	Sun	19.30	India Vs New Zealand	Super 12- Grp 2	Dubai
01 Nov	Mon	19.30	England Vs A1	Super 12- Grp 1	Sharjah
02 Nov	Tue	15.30	South Africa Vs B2	Super 12- Grp 1	Abu Dhabi
02 Nov	Tue	19.30	Pakistan Vs A2	Super 12- Grp 2	Abu Dhabi
03 Nov	Wed	15.30	New Zealand Vs B1	Super 12- Grp 2	Dubai
03 Nov	Wed	19.30	India Vs Afghanistan	Super 12- Grp 2	Abu Dhabi
04 Nov	Thu	15.30	Australia Vs B2	Super 12- Grp 1	Dubai
04 Nov	Thu	19.30	West Indies Vs A1	Super 12- Grp 1	Abu Dhabi
05 Nov	Fri	15.30	New Zealand Vs A2	Super 12- Grp 2	Sharjah
05 Nov	Fri	19.30	India Vs B1	Super 12- Grp 1	Dubai
06 Nov	Sat	15.30	Australia Vs West Indies	Super 12- Grp 1	Abu Dhabi
06 Nov	Sat	19.30	England Vs South Africa	Super 12- Grp 1	Sharjah
07 Nov	Sun	15.30	New Zealand Vs Afghanistan	Super 12- Grp 2	Abu Dhabi
07 Nov	Sun	19.30	Pakistan Vs B1	Super 12- Grp 2	Sharjah
08 Nov	Mon	19.30	India Vs A2	Super 12- Grp 2	Dubai
10 Nov	Wed	19.30	Grp 1- 1st Vs Grp 2-2 nd	Semifinal	Dubai
11 Nov	Thu	19.30	Grp 1- 2nd Vs Grp 2- 1st	Semifinal	Dubai

GRAND FINALE- 14 NOVEMBER 2021 @ 7.30 PM IST

FEEDBACK

Please provide your feedback by scanning QR code

