



Medical News

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Defibrillation Strategies for Refractory Ventricular Fibrillation

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Despite advances in defibrillation technology, shock-refractory ventricular fibrillation remains common during out-of-hospital cardiac arrest. Double sequential external defibrillation (DSED; rapid sequential shocks from two defibrillators) and vector-change (VC) defibrillation (switching defibrillation pads to an anterior–posterior position) have been proposed as defibrillation strategies to improve outcomes in patients with refractory ventricular fibrillation.

We conducted a cluster-randomized trial with crossover among six Canadian paramedic services to evaluate DSED and VC defibrillation as compared with standard defibrillation in adult patients with refractory ventricular fibrillation during out of-hospital cardiac arrest. Patients were treated with one of these three techniques according to the strategy that was randomly assigned to the paramedic service.

The primary outcome was survival to hospital discharge. Secondary outcomes included termination of ventricular fibrillation, return of spontaneous circulation, and a good neurologic outcome, defined as a modified Rankin scale score of 2 or lower (indicating no symptoms to slight disability) at hospital discharge.

A total of 405 patients were enrolled before the data and safety monitoring board stopped the trial because of the coronavirus disease 2019 pandemic. A total of 136 patients (33.6%) were assigned to receive standard defibrillation, 144 (35.6%) to receive VC defibrillation, and 125 (30.9%) to receive DSED. Survival to hospital discharge was more common in the DSED group than in the standard group (30.4% vs. 13.3%; relative risk, 2.21; 95% confidence interval [CI], 1.33 to 3.67) and more common in the VC group than in the standard group (21.7% vs. 13.3%; relative risk, 1.71; 95% CI, 1.01 to 2.88). DSED but not VC defibrillation was associated with a higher percentage of patients having a good

neurologic outcome than standard defibrillation (relative risk, 2.21 [95% CI, 1.26 to 3.88] and 1.48 [95% CI, 0.81 to 2.71], respectively).

Among patients with refractory ventricular fibrillation, survival to hospital discharge occurred more frequently among those who received DSED or VC defibrillation than among those who received standard defibrillation.

Long-term Depression May Hasten Brain Aging in Midlife

MEDSCAPE

February 03, 2023

Elevated depressive symptoms were associated with an additional brain age of nearly 3 years, based on data from more than 600 individuals.

Previous research suggests a possible link between depression and increased risk of dementia in older adults, but the association between depression and brain health in early adulthood and midlife has not been well studied.

In a study published in the *Journal of Affective Disorders*, the researchers identified 649 individuals aged 23–36 at baseline who were part of the Coronary Artery Risk Development in Young Adults (CARDIA) study. All participants underwent brain MRI and cognitive testing. Depressive symptoms were assessed six times over a 25-year period using the Center for Epidemiological Studies Depression scale (CES–D), and the scores were analyzed as time-weighted averages (TWA). Elevated depressive symptoms were defined as CES-D scores of 16 or higher. Brain age was assessed via high-dimensional neuro-imaging. Approximately half of the participants were female, and half were Black.

Overall, each 5-point increment in TWA depression symptoms over 25 years was associated with a 1-year increase in brain age, and individuals with elevated TWA depression averaged a 3-year increase in brain age compared with those with lower levels of depression after controlling for factors including chronological age, sex, education, race, MRI scanning site, and intracranial volume, they said. The association was attenuated in a model controlling for antidepressant use, and further attenuated after

adjusting for smoking, alcohol consumption, income, body mass index, diabetes, and physical exercise.

In addition, elevated depressive symptoms were associated with a threefold increase in the odds of poor cognitive function at midlife (odds ratio, 3.30), although these odds were reduced after adjusting for use of antidepressants (OR, 1.47).

The mechanisms of action for the link between depression and accelerated brain aging remains uncertain, the researchers wrote in their discussion. "Studies over the last 20 years have demonstrated that increased inflammation and hyperactivity of the hypothalamic-pituitary-adrenal (HPA) axis are two of the most consistent biological findings in major depression, which have been linked to premature aging," they noted. "Alternative explanations for the link between depression and adverse brain health could be underlying factors that explain both outcomes rather independently, such as low socioeconomic status, childhood maltreatment, or shared genetic effects," they added.

Adjustment for antidepressant use had little effect overall on the association between depressive symptom severity and brain age, they said.

The current study findings were limited by the single assessment of brain age, which prevented evaluation of the temporality of the association between brain aging and depression, the researchers noted.

However, the results were strengthened by the large and diverse cohort, long-term follow-up, and use of high-dimensional neuro-imaging, they said. Longitudinal studies are needed to explore mechanisms of action and the potential benefits of antidepressants, they added.

In the meantime, monitoring and treating depressive symptoms in young adults may help promote brain health in midlife and older age, they concluded.

Vitamin D Supplementation Linked to Fewer Suicide Attempts

MEDSCAPE

February 01, 2023

Oral vitamin D supplementation nearly halved the rates of suicide and intentional self-harm in a study of US veterans, with an even stronger effect among Black veterans.

The retrospective cohort study also showed that higher daily vitamin D supplement dosages appeared to offer greater protection against suicide and self-

harm risk than lower doses, that the effect was greater among those with baseline vitamin D deficiency or insufficiency, and that both vitamin D2 (ergocalciferol) and D3 (cholecalciferol) supplements were effective.

"As a relatively safe, easily accessible, and affordable medication, supplementation with vitamin D in the [Veterans Administration] may hold promise if confirmed in clinical trials to prevent suicide attempts and suicide," write Jill E. Lavigne, PhD, and Jason B. Gibbons, PhD, in their study, published online February 1 in *PLoS One*.

Pending those confirmatory trials, they advise: "Providers may wish to initiate low-dose vitamin D supplementation, for example, at the US [recommended dietary allowance] level of 600 IU per day, without screening in patients with a history of suicidal behavior or ideation or who exhibit warning signs of suicidal behavior."

The US Preventive Services Task Force advises against routine vitamin D screening, and in a review of 11 trials found no differences in mortality with vitamin D supplementation, nor in incident depression in different populations.

However, "the subjects in those studies had adequate levels of vitamin D, so they didn't have insufficiency. That was a big limitation and why there's been this call for further research. Our paper uses real-world data," Lavigne of the VA Center of Excellence for Suicide Prevention, Canandaigua, New York, told *Medscape Medical News*.

Longer Diabetes Duration Links with Increased Heart Failure

MEDSCAPE

February 03, 2023

The longer people had diabetes, the greater their rate of incident heart failure, suggests a recently published review of prospectively collected observational data from nearly 24,000 people with diabetes in the UK Biobank.

Collectively, the new UK Biobank results and prior findings, "provide additional persuasive evidence that the link between duration of diabetes and heart failure is real," although the physiological mechanisms behind the relationship remain incompletely understood, writes Echouffo-Tcheugui, an endocrinologist at Johns Hopkins Medicine in Baltimore, Maryland.

"The duration of diabetes may reflect cumulative effects of various adverse processes in the setting of diabetes" that result in "intrinsic myocardial lesions," he suggests. These adverse processes might include not only hyperglycemia, but also glucotoxicity, lipotoxicity, hyperinsulinemia, advanced glycosylation end products, oxidative stress, mitochondrial dysfunction, cardiac autonomic neuropathy, and coronary microvascular dysfunction. Long-duration diabetes may also contribute to declining kidney function, which can further worsen heart failure risk.

The upshot is that clinicians may need to consider more systematically the duration of diabetes when assessing people with diabetes for heart failure.

Intensify Heart Failure Detection With Longer Diabetes Duration

"Active heart failure detection should perhaps be intensified with increased diabetes duration," Echouffo-Tcheugui suggests in his editorial. He notes that a 2022 consensus report by the American Diabetes Association recommends clinicians measure natriuretic peptide or high-sensitivity cardiac troponin in all people with diabetes "on at least a yearly basis to identify the earliest heart failure stages and implement strategies to prevent transition to symptomatic heart failure."

The UK Biobank study was run by investigators primarily based in China and included data from 23,754 people with type 1 or type 2 diabetes and no heart failure at baseline. The prospectively collected data allowed for a median follow-up of 11.7 years, during which time 2081 people developed incident heart failure.

In an analysis that divided participants into four categories of diabetes duration (< 5 years, 5-9 years, 10-14 years, and \geq 15 years) and adjusted for potential confounders, heart failure incidence showed a significant 32% increased incidence among those with diabetes for \geq 15 years compared with those with diabetes for < 5 years. People with diabetes duration of 5-14 years showed a trend toward having more incident heart failure compared with those with diabetes for < 5 years, but the difference was not significant.

Healthy Habits Lower T2D Micro-vascular Risks: Cohort Study

Richard Mark Kirkner

January 31, 2023

People with diabetes who adhere to a healthy diet, exercise regularly, and follow other healthy lifestyle practices have a significantly lower risk of microvascular complications from the disease, such as diabetic neuropathy, retinopathy, and nephropathy, as well as foot disorders, than counterparts with diabetes who don't, a prospective cohort study of more than 7,000 patients with type 2 diabetes has found.

"We believe this is one of the first large-scale analyses among diabetes patients that specifically examined an overall healthy lifestyle in relation to the risk of developing microvascular complications," senior study author Qi Sun, MD, ScD, said in an interview. "The results are not surprising that the healthy lifestyle is associated with lower risk of developing these complications and the enhanced adherence to the healthy lifestyle is associated with lower risk as well. And these findings bear lots of public health significance as they suggest the important role of living a healthy lifestyle in the prevention of diabetes complications, on top of the clinical treatment."

The study stated that the findings "lend support" for the American Diabetes Association guidelines for healthy lifestyle practices in people with diabetes.

The study used a cohort from two large prospective cohort studies, the Nurses' Health Study (NHS) and the Health Professionals Follow-up Study (HPFS), comprising 4,982 women and 2,095 men who were diagnosed with type 2 diabetes during follow-up. They had no cardiovascular disease or cancer at the time of their diabetes diagnosis. Both NHS and HPFS used validated questionnaires to gather information on diet, lifestyle, medical history, and newly diagnosed diseases every 2-4 years. The latter study included NHS and HPFS participants who also completed supplementary questionnaires about their diabetes.

The latest study took into account five modifiable lifestyle-related factors: diet, body weight, smoking status, alcohol, and physical activity. For diet, both large studies used the 2010 Alternate Healthy Eating Index to assess diet quality; those in the upper 40th percentile of the study population were defined as healthy diet. Healthy body weight was defined at a body mass index of 18.5-25 kg/m².

Among the latter study cohort, 2,878 incident cases of diabetic microvascular complications were documented during follow-up. Patients who adhered to a healthy lifestyle before their diabetes diagnosis, defined as having four or more low-risk lifestyle

factors, had a 27% lower relative risk of developing any microvascular complication than counterparts with no low-risk lifestyle factors (relative risk, 0.73; 95% confidence interval, 0.35-1; $P = .006$).

The study found similar outcomes for those who adopted a healthy lifestyle after their diabetes diagnosis, with a 32% reduction in relative risk compared with those who didn't adopt any healthy lifestyle practices (RR, 0.68; 95% CI, 0.55-0.83; $P < .001$).

A randomized trial would be a more rigorous way to evaluate the impact of a healthy lifestyle, Dr. Sun said, "although it's much more expensive than a cohort study like what we did with this investigation."

As for future research, Dr. Sun said, "It will be interesting to understand mechanisms underlying these observations. It's also critical to understand why certain diabetes patients may not benefit from a healthy lifestyle, since some of them, even when living a healthy lifestyle, still develop the complications."

Frequent Visits to Green Spaces Linked to Lower Use of Some Meds

Fran Lowry

February 01, 2023

Frequent visits to green spaces such as parks and community gardens are associated with a reduced use of certain prescription medications among city dwellers, a new analysis suggests.

In a cross-sectional cohort study, frequent green space visits were associated with less frequent use of psychotropic, antihypertensive, and asthma medications in urban environments.

Viewing green or so called "blue" spaces (views of lakes, rivers, or other water views) from the home was not associated with reduced medication use.

The growing scientific evidence supporting the health benefits of nature exposure is likely to increase the availability of high-quality green spaces in urban environments, and promote the use of these spaces, lead author Anu W. Turunen, PhD, from the Finnish Institute for Health and Welfare, Kuopio, Finland said in a talk.

This might be one way to improve health and well-being among city dwellers, Turunen added.

Exposure to natural environments is thought to be beneficial for human health, but the evidence is inconsistent, Turunen said.

"The potential health benefit of nature exposure is a very timely topic in environmental epidemiology. Scientific evidence indicates that residential exposure to greenery and water bodies might be beneficial, especially for mental, cardiovascular, and respiratory health, but the findings are partly inconsistent and thus, more detailed information is needed," she said.

In the current cross-sectional study, the investigators surveyed 16,000 residents of three urban areas in Finland — Helsinki, Espoo, and Vantaa — over the period of 12 months from 2015 to 2016, about their exposure to green and blue spaces. Of this number, 43% responded, resulting in 7321 participants. In the questionnaire, green areas were defined as forests, parks, fields, meadows, boglands, and rocks, as well as any playgrounds or playing fields within those areas, and blue areas were defined as sea, lakes, and rivers. Residents were asked about their use of anxiolytics, hypnotics, antidepressants, antihypertensives, and asthma medication within the past 7 to 52 weeks. They were also asked if they had any green and blue views from any of the windows of their home, and if so, how often did they look out of those windows, selecting "seldom" to "often."

They were also asked about how much time they spent outdoors in green spaces during the months of May and September. If so, did they spend any of that time exercising? Options ranged from never to 5 or more times a week.

In addition, amounts of residential green and blue spaces located within a 1 km radius of the respondents' homes were assessed from land use and land cover data.

Results showed that the presence of green and blue spaces at home, and the amount of time spent viewing them, had no association with the use of the prescribed medicines.

However, greater frequency of green space visits was associated with lower odds of using the medications surveyed. "We observed that those who reported visiting green spaces often had a slightly lower BMI than those who visited green spaces less often," Turunen said. However, no consistent interactions with socioeconomic status indicators were observed.

"We are hoping to see new results from different countries and different settings," she noted. "Longitudinal studies, especially, are needed. In epidemiology, a large body of consistent evidence is needed to draw strong conclusions and to make

recommendations."

PSIMNEWS CORNER:

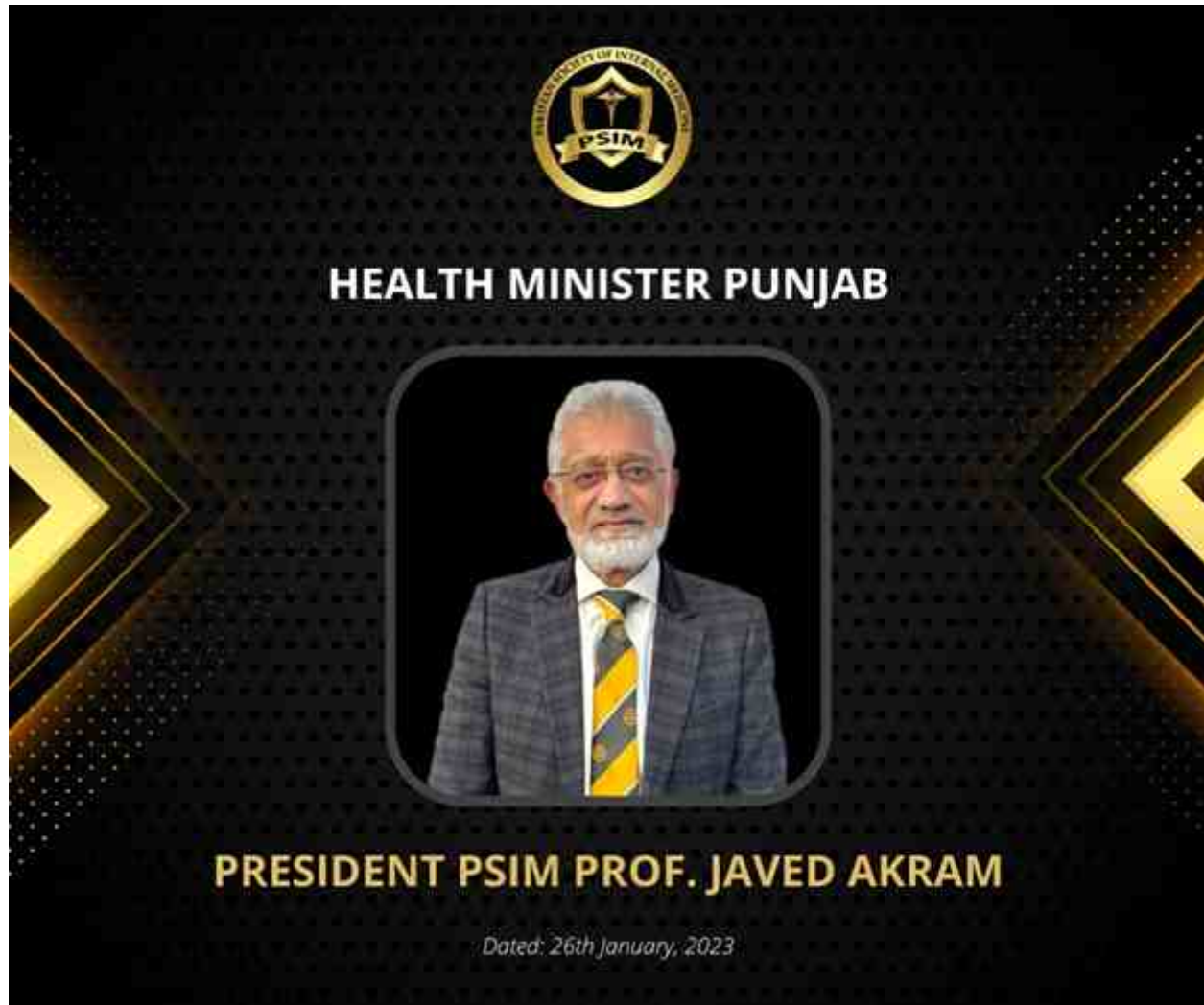
Prof. Javed Akram President Pakistan Society of Internal Medicine appointed as Health Minister Punjab.

"Diabetes Master Class" by PSIM :

The sessions were moderated by Dr. Wafa Qaiser & Dr. Sidra Lodhi.

All the attendees applauded the session and had an interactive discussion with the speakers and panelists.

It's been a moment of great Pride and achievement for selection of President Pakistan Society of Internal



Disseminating knowledge of EASD - ADA Consensus Guidelines

Diabetes master class was held on 21st January at nishat hotel Lahore in collaboration with Sanofi Pakistan. There master class comprised of two sessions each having two brainy talks.

The sessions were chaired by notable panel of experts, such as; Dr. Imtiaz Hassan, Prof. Khadija Irfan and, Prof Aizaz Mand Ahmad, Prof. Nadeem Hayat Malik & Prof. Rizwan Zafar

Esteemed speakers; Dr. Sidrah Lodhi, Prof. Aftab Mohsin, Prof. Aziz-ur-Rehman, Dr. Somia Iqtadar, Prof. Tariq Waseem & Prof. Javed Akram.

medicine Prof. Javed Akram as caretaker Health minister Punjab on 26th January 2023.

The oath ceremony took place at Governor House in the evening. Since the day of his joining, prof javed akram is busy in uplifting the healthcare standards for the ailing humanity.

PSIM extends sincere congratulations and warmest wishes on appointment of Prof Javed Akram, His Excellency as Minister for Health Punjab.

2nd hybrid Cardiovascular Health and ASCVD Prevention course"

2nd Hybrid One day certification course on "Cardiovascular Health and ASCVD Prevention"

was held on Saturday, 28th Jan at Faletti's Hotel in collaboration with Atco Pharma. The course had two sessions each comprising of four talks highlighting the 8 essentials of life. The sessions were chaired by notable panel of experts i.e; Prof Aftab Mohsin, Prof Sajid Abaidullah, Prof Rizwan Zafar, Prof Shehryar A Sheikh, Prof M. Akbar Chaudhary. Honourable Minister Health and President PSIM Prof Javed Akram graced the occasion with his valuable presence and highlighted the preventive aspect of CV health.

Course director Prof Tariq Waseem shared his thoughts regarding 8 essentials of life and CVH score along with other esteemed speakers i.e Prof Zafar Iqbal Ch, Prof Zaheer Akhtar, Dr. Mohsin Shah, Prof Aziz ur Rehman, Prof Bilal Mohyidin, Prof Taj Jamshaid and Dr Junaid Zafar. The sessions were moderated by Dr Hina and Dr Wafa. More than 85 participants joined via zoom. All the attendees applauded the course. This CVH and ASCVD one day course is coming to other cities this month.







Cardiovascular Health & ASCVD Prevention Course by PSIM

The collage features four photographs documenting the course. The top-left photo shows a group of approximately 15 individuals, including men and women in professional attire, standing together for a group photo. The top-right photo shows a man with a white beard and glasses speaking at a podium, with a banner for "Dii Plus (amlodipine + valsartan)" visible behind him. The bottom-left photo shows a group of about 10 people seated at a long table covered with a dark cloth, likely during a panel discussion or meeting. The bottom-right photo is a circular logo for PSIM (Pakistan Society of Internal Medicine).