



## A Tale of Temporary Pacemakers in Khyber Pakhtunkhwa

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### Significance

Temporary pacemaker (TPM) is life-saving device in the face of severe symptomatic bradycardia. It is crucial that the TPM should be readily accessible for patients to avoid unfortunate circumstances. However, situation in Khyber Pakhtunkhwa (KPK) is far from the ideal. The inadequate supply of TPMs in the health care centers, especially in far flung areas, often culminates in mortality of the patients. In this letter, authors are highlighting this set-back in the health care system in KPK, Pakistan, so that this issue gets due attention.

Dear Editor,

Temporary cardiac pacing is an artificial method of electrical cardiac stimulation to treat a bradyarrhythmia (BA) or tachyarrhythmia until resolution or initiation of long-term treatment. The goal of this temporary stimulation is to restore circulation and normal hemodynamics that has been significantly compromised by abnormal heart rate (1). Temporary artificial pacing is recommended in a variety of circumstances, most notably in individuals with severe BA such as second- or third-degree atrioventricular block (AVB), or severe symptomatic bradycardia irrespective of the cause. Furthermore, temporary pacing can be used as an overpass while awaiting placement of permanent pacemaker (PPM) in patients (2).

Temporary pacemakers (TPM) are used to treat emergencies in individuals with severe symptomatic BA and for elderly patients who are hemodynamically unstable and refractory to medical treatment. TPM is a critical emergency tool for saving lives in such situations, which is why it is highly concerning that the people of Khyber Pakhtunkhwa (KPK) can avail this vital therapy only at the province's four tertiary care hospitals (TCH). For people residing in peripheral areas, it takes more than 4-5 hours on average to reach TCH, which is dreadful in face of an emergency. This discrepancy in availability of TPM often causes thromboembolism, stroke and in many cases culminating in the patient's death before reaching the hospital. According to the American Heart Association (AHA), if left untreated, severe or prolonged bradycardia can lead to a variety of problems, including heart failure, hypotension, and hypertension. For certain situations, bradycardia can be followed by

a rapid heartbeat, known as tachycardia. When these two conditions occur simultaneously, they are referred to as Bradycardia-Tachycardia or Tachy-Brady syndrome. This is a form of sick sinus syndrome that can be linked with the heart rhythm disease atrial fibrillation, increasing the risk of consequences such as stroke and sudden death, or cardiac arrest (3). As of 2019, almost 15 million Pakistanis were over the age of 60 years, accounting for 7% of the country's total population (4). This is concerning since research shows that conduction abnormalities increased with age. According to a study done in Pakistan, the incidence of conduction defects rose with age, with the highest frequency (28%) seen between the ages of 61 to 70. Third-degree heart block was common (75%) among conduction abnormalities in the investigated group. It was also determined that the rate of pacemaker placement increased with age (5). Therefore, the need for an unprecedented demand for TPM is crucial. It is high time to take steps towards widespread availability of TPM all over KPK at the District Head Quarters (DHQs) level. It is also critical to appoint appropriate allied health professionals for TPM placement, who could deal with the situation without immediate supervision by the cardiologist. With this letter, we call for action to the concerned health care sector authorities in KPK and in Pakistan to supply the requisite quantity of TPM in all KPK health care institutions including smaller set-ups such as DHQs. This would safeguard the preservation of valuable lives while also help reduce mortality and morbidity owing to the scarcity of TPM. To conclude, there is an urgent need for TPM to be made available in all the province's hospitals to prevent the vulnerable population from the life-threatening consequences of BA.

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