

## The burden of cardiovascular disease in South Asia: the need for effective treatment

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Dear Ma'am, Cardiovascular disease (CVD) is rapidly becoming the leading cause of death worldwide<sup>1</sup>. According to global health projections, it will remain the number one cause of death in 2030. The Asian region has been shown to have a higher cardiovascular disease burden than Western countries, and most of this burden is borne by economically disadvantaged people mainly located in South Asian regions such as Pakistan<sup>1</sup>. A large-scale survey conducted in 53 cities in Punjab, Pakistan, found that 17.5% of the population suffered from cardiovascular disease<sup>2</sup>.

Mechanical thrombectomy is a minimally-invasive procedure where a specialized interventional radiologist utilizes specific equipment to remove a blood clot from an artery in a patient's body. This procedure treats arterial blockages caused by blood clots such as Deep Vein Thrombosis (DVT), Ischaemic Stroke, etc<sup>3</sup>.

MegaVac, a part of mechanical thrombectomy, is the newest technique for the removal of blood clots from arteries. It is an invasive procedure that ensures the complete removal of clots from the occluded artery. The biggest advantage of this technique over typical clot removal is that it prevents embolus formation, which can occlude smaller arteries.

The MegaVac Thrombectomy System is an intravascular mechanical thrombectomy and aspiration device with a single use that includes a thrombowire with an embolectomy component. A distal silicone-coated nitinol braid used in the SafeSeal™ technology of the MegaVac Catheter swells to momentarily obstruct antegrade blood flow. The braid is expanded by the inner and outer coaxial shafts of the catheter body, briefly occluding the channel and enabling aspiration. SafeSeal funnel is activated by the assembly of the proximal handle. A nitinol

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embolectomy component that is part of the thrombowire can be used to draw material in the direction of the MegaVac catheter when it is inflated by the proximal actuation handle<sup>4</sup>.

Thrombectomy is a common and effective procedure for clot removal but in Pakistan thrombectomy is not as common compared to developed countries, primarily due to two reasons. First, Mechanical thrombectomy is exclusively available in four hospitals nationwide, with only one public hospital in Lahore providing this procedure<sup>5</sup>. Second, it is an expensive procedure that ranges from 1700\$ to 5000\$ depending on the severity of the patient and the complexity of the procedure. Health Departments of Pakistan should provide this facility in more public hospitals so it becomes accessible to more people.

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