

## **Dilemma of indiscriminate use of Vena Cava filters**

Madam, mechanical interruption of blood flow by femoral vein ligation as a means to protect against pulmonary embolism (P.E.) was first performed by John Hunter in 1784.<sup>1,2</sup> Mobin-Uddin a Pakistani Vascular Surgeon was the first to introduce intra-luminal device in 1967.<sup>3</sup> However, the earlier umbrella devices had a significant thrombosis and migration rate. In 1973, the Greenfield filter was introduced which could be inserted percutaneously and have received wide success.

The practice of Inferior Vena Caval (IVC) Filter insertion has significantly changed over the years. There has been multifold increase in IVC filter insertion over the last two decades, due to ever expanding indications.<sup>4</sup> The ease of insertion via percutaneous methods along with introduction of newer retrievable devices might also be responsible for these increased rates. This has occurred despite the evidence that only a proportion of retrievable filters are actually retrieved.<sup>5</sup> The IVC filter was initially

placed in patients with contraindication or complication to anticoagulation but now it's being placed for patients with embolism having poor cardiopulmonary reserve, free floating clot, in trauma patients with multiple injuries who despite of being a high risk of embolism cannot be given anti-coagulation, as pre-operative prophylaxis in selected individuals and in patients who are non-compliant with anticoagulation.<sup>6</sup>

The cost of filter placement in USA ranges from 1265- 1703\$ (approx PKR 126,140. on average) depending on which brand was used.<sup>7</sup> Retrievable filters are more expensive than permanent filters and from a financial point of view situation is even more worrisome since they don't get retrieved in vast majority of cases. Even more astonishing is the suggestion that insertion of an IVC filter provides little or no survival benefit in high-risk patient's categories i.e. advanced malignancy.<sup>8</sup>

Currently there is no data available on the burden of thromboembolism in out patient population. The prevailing belief that thromboembolism in Asian population is less than in the Western population has essentially been disproved.<sup>9,10</sup> Rapid industrialization and an increase in life expectancy suggest that the incidence will continue to grow in the years to come. Although IVC filters are being placed in increasing numbers in Subcontinent and neighbouring countries, resource constraints has lead to limited applications of healthcare guidelines developed for western nations.<sup>11</sup> It is now more important than ever for low income countries to come together and develop a common ground for establishing guidelines and protocols to practice economically feasible and culturally compatible therapeutic modalities.

In sum, despite the increasing utility of IVC filter over the past 30 years, controversy regarding their appropriateness continues. Although, filters can now be placed with minimal procedure or filter related

complication compared with historical controls, we recommend thorough consideration on case-to-case basis. When retrievable filters are pursued plan regarding the timing of retrieval should be clear to patient and all involved providers. We also feel that filter placement in sicker patients should be withheld since it has not shown mortality benefit and might add to morbidity.

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