

Will these New Devices fill the gap between drug therapy and surgery?

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The impetus for and interest in devices for epilepsy is a necessary and highly desirable but inherently insufficient step in the “fight” against epilepsy. The timely question posed by this meeting’s organizers (“Will these New Devices fill the gap between drug therapy and surgery?”) must be addressed, in the interest of thoroughness, at two levels: 1. Therapeutic efficacy; 2. The therapies’ capacity to lighten cost-effectively the disease burden globally. The answer to the first question is a qualified yes and to the second question a qualified no.

Efficacy of electrical, thermal or drug delivery devices, presently marginal, will improve provided that a) Means for objective and reproducible quantification of all seizure variable (intensity, duration, extent of spread and frequency) are introduced and “novel” (for epileptology) statistical tools such as regression models and principal component analysis are used to assess therapeutic responses; b) The current trial and error approach is replaced by one based on mechanisms of ictogenesis and when applicable of epileptogenesis.

The current process required to commercialize medical devices and the understandable emphasis on profits, will likely limit the availability of devices largely to patients living in industrialized countries and having generous health insurance coverage. The emergence of a disruptive technology and a large “dose” of social entrepreneurship will likely be required to address disease burden at a global scale.