

Collaborative European NeuroTrauma Effectiveness Research in TBI (CENTER-TBI)

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Traumatic brain injury (TBI) is a major cause of death and disability, leading to great personal suffering to victim and relatives, as well as huge direct and indirect costs to society. Strong ethical, medical, social and health economic reasons therefore exist for improving treatment. The CENTER-TBI project will collect a prospective, contemporary, highly granular, observational dataset of 5400 patients, which will be used for better characterization of TBI and for Comparative Effectiveness Research (CER). The generalizability of our results will be reinforced by a contemporaneous registry level data collection in 15-25,000 patients.

Our conceptual approach is to exploit the heterogeneity in biology, care, and outcome of TBI, to discover novel pathophysiology, refine disease characterization, and identify effective clinical interventions. Key elements are the use of emerging technologies (biomarkers, genomics and advanced MR imaging) in large numbers of patients, across the entire course of TBI (from injury to late outcome) and across all severities of injury (mild to severe). Improved characterization with these tools will aid Precision Medicine, a concept recently advocated by the US National Academy of Science, facilitating targeted management for individual patients. Our consortium includes leading experts and will bring outstanding biostatistical and neuroinformatics expertise to the project. Collaborations with external partners, other FP7 consortia, and international links within InTBIR, will greatly augment scientific resources and broaden the global scope of our research. We anticipate that the project could revolutionize our view of TBI, leading to more effective and efficient therapy, thus improving outcome and reducing costs. These outcomes reflect the goals of CER to assist consumers, clinicians, health care purchasers, and policy makers to make informed decisions, and will improve healthcare at both individual and population levels.