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Title: Traumatic brain injury – global collaboration for a global challenge

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Even though, low- and middle-income countries (LMICs) are facing a far greater traumatic brain injury (TBI) burden compared to high-income countries (HICs), agency funding and multi-centre research efforts have had a disproportionately greater focus on HICs.\(^2\) Initiatives, such as InTBIR,\(^3\) are advancing TBI care in HICs but the participation of LMICs has been very limited. Additionally, multi-centre trials in TBI, with very few exceptions, have predominantly focused on HIC populations.

The concern is that the setting of a study also determines whether its findings can be generalised and influence the day-to-day practice of clinicians working in different settings. As an example, one of the main interventions in the field of TBI is a decompressive craniectomy, where a large piece of skull is removed, in order to accommodate severe brain swelling. The two randomised trials that attempted to define the role of decompressive craniectomy in TBI, exclusively enrolled patients who were managed in intensive care units with monitoring of intracranial pressure (ICP).\(^4\) Nevertheless, the majority of TBI patients in LMICs do not have access to intensive care units and ICP monitoring is also not routinely available.

This is a reality that we cannot continue to ignore. Despite the often extremely limited resources (infrastructure, equipment, healthcare professionals), patients in LMICs require and receive care for TBI. It might not be care that clinicians in HICs would recognise as gold-standard but it is often the best that can be offered in a resource-limited setting. In such settings, the volume of unmet needs for essential neurosurgical care for TBI is estimated at more than 2 million cases per year.\(^4\) We believe that clinicians and researchers in HICs have a moral obligation to work together with clinicians and researchers from LMICs in order to facilitate the development of high-quality TBI research in LMICs. Policy makers, funding agencies and University leaders have a responsibility to create an environment for such collaborations to flourish by recognising the role of HICs in advancing care for patients in LMICs, directing the appropriate funds, and overcoming organisational barriers, respectively.

In 2017, the UK Department of Health funded the establishment of several such multi-country groups and units with a total of £162 million in order to stimulate healthcare research that will directly benefit patients in LMICs. Nearly, £1.8 million were awarded for the establishment of a group focused on TBI. The NIHR Global Health Research Group on Neurotrauma, as the group is known, brings together clinicians and researchers from 11 LMICs and 3 HICs.\(^5\) The Group’s research programme is organised around 4 themes. The first theme has just launched the first prospective observational study of patients undergoing emergency surgery after a TBI worldwide (globalneurotrauma.com) and will subsequently launch a global TBI registry. The second theme is using a systems engineering approach to develop an in-depth understanding of the challenges associated with improving TBI care. The third theme is focusing on the evaluation of interventions tailored for use in LMICs and the fourth theme aims to map and nurture the TBI research capacity in LMICs. We are optimistic that the Group will build a robust collaborative platform for pursuing a long-term neurotrauma programme focused on LMICs. Hence, we extend an invitation to clinicians and researchers wishing to collaborate to contact us via www.neurotrauma.world.

**Conflict of interests**

Dr. Kolias has nothing to disclose. Dr. Rubiano has nothing to disclose. Dr. Figaji has nothing to disclose. Dr. Servadei reports personal fees from Takeda Pharmaceutical Company Ltd, grants and personal fees from Integra LifeSciences, grants and personal fees from Finceramica S.p.A., all outside the submitted work. Dr. Hutchinson has nothing to disclose.
Authors' contributions

All authors contributed to writing and revising the manuscript.

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Ethics committee approval

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References


5. www.neurotrauma.world, official website of NIHR Global Health Research Group on Neurotrauma (accessed 31/10/18)