The Collaborative Big Bang and Introduction to the European Vascular Research Collaborative

Historically the vascular surgical community has been strong academically, running and publishing large successful multicentre randomised clinical trials (RCTs). These included Carotid (ECST and ACAS), abdominal aortic aneurism (DREAM, EVAR-1 and 2, UK SAT, MASS, and IMPROVE), and critical limb ischaemia trials (BASIL); as well as participation in large registries, such as EUROSTAR and RETA. In recent years enrolment of patients in RCTs in vascular surgery has been poor (BASIL 2 and 3, ECST 2) and vascular surgery is lagging far behind its surgical oncology cousins who enrol up to 80% of their patients into some form of research. As well as supporting the development of knowledge, it has been recognised that outcomes of patients who are treated at centres that actively engage with research are better. It seems that the community needs a new approach and renewed impulse to fuel novel research initiatives.

Since the turn of the millennium, the formation and participation in Research Collaboratives (RCs) have increased dramatically, coinciding with the technical revolution and digitalisation in healthcare. RCs are inclusive organisations that follow a multilateral approach to speed up and scale up research projects by joining efforts and increasing sample sizes. Within surgery, it has long been a requirement for trainees to participate in academia and publish findings; often this led to output that was unlikely to influence medical science or clinical practice (e.g., small retrospective single centre studies with large confidence intervals and susceptible to bias). With the increasing demand from grant providers, society, and journals for more methodologically robust research, increasing digitalisation, published reporting standards, and the continued requirement for surgical trainees to publish, the collaborative method is a compelling fit to achieve these goals.

To initiate and pursue a successful RC, which provides opportunities to trainees of all levels, several requirements should be fulfilled, and challenges overcome. Challenges that might be encountered in multinational and multicentre collaboratives are problems with intellectual property, communication, varying ethical requirements by country, and disco-ordination. Important requirements are to engage committed trainees, ensure shared benefits, identify and attract inspirational mentors, obtain (inter)national endorsement and encouragement, develop local networks, and ultimately an efficient administration. Successful navigation of the aforementioned challenges will culminate in a successful study, which will lay a strong foundation for many future endeavours.

As well as being theoretically desirable, evidence suggests that trainees are engaged with this method of research, and in the specialty of General Surgery in the UK, participation in trainee collaborative research is higher than those studies supported by the Clinical Research Network (CRN) established by the National Institute of Health Research (NIHR). Nepogodiev et al. found 99% of UK hospitals (238/241) contributed to trainee led collaborative studies over the past decade compared with 79% (191/241) for CRN studies. Trainee participation in the management of national research as well as its design and implementation is now a priority for the Royal College of Surgeons of England (RCS), in the form of the RCS surgical trials initiative. Six surgical trial centres spread across England have been created, each being led by a consultant surgeon and a trainee; their purpose is to “support new studies across all surgical specialties, ensuring that surgical innovations are introduced quickly and help to reduce regional variation in care.” As well as becoming a priority for surgical societies, trainees want the opportunity to contribute to important research and it is now being reflected in their training requirements.

RCs have been progressively increasing their output, and the COVID-19 pandemic has accelerated their influence and highlighted the impact a well run collaborative can have. The leaders in providing usable data for widespread use have been the GlobalSurg collaborative with their COVIDSurg registry. GlobalSurg have published 38 articles since 2014 all in high impact journals (BJS, Lancet, BMJ) and have amassed a n impressive 872 citations (21 March 2022), demonstrating the significant effect a trainee led RC can have. With vascular surgery specifically in mind, the United Kingdom based Vascular and Endovascular Research Network (VERN) has been running the COVER study providing informative data to help guide clinicians during active COVID-19 surges as well as...
restoration of normal practice. Both groups show what can be achieved with young enthusiastic researchers at the wheel!

It is now time for a trainee led international vascular surgery collaborative, consisting of members across Europe (and abroad) to provide much needed large scale research into conditions where there still seems to be a dearth of data. In an attempt to bridge this gap, a group of young vascular surgeons have come together to form a group called the European Vascular Research Collaborative (EVRC). The aim is to run collaborative studies across the European continent, engaging a large number of countries to participate and contribute. In the spirit of the RC movement, the intention is for this group to be run by students and trainees, guided by vascular specialists seasoned in (multicentre) research to assure feasibility and achieve high methodological quality.

When fully operational the EVRC should have the capacity to allow trainees and clinicians to participate in research independent of the profile of their institution (non-academic centres) or healthcare system. Introducing more individuals to research and training the primary investigators of the future, facilitating more research activity in more centres. More widespread engagement should help raise the standards of healthcare and ultimately individual patient care. With the encouragement of student investigators, it should positively influence the interest in the specialty and encourage recruitment. Co-operation between enthusiastic trainees, experienced researchers, and patient representatives will assure high volume and methodologically sound studies providing meaningful outcomes.

The EVRC is currently in the process of finalising their first study protocol, the PROMOTE ALI study, investigating treatments and early outcomes of patients with acute limb ischaemia across the continent. The hope is to establish this inclusive organisation as the hub of trainee led research across the continent of Europe and in doing so, increase trainee research exposure and drive knowledge in vascular conditions even for complex emergency clinical conditions.

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**CONFLICT OF INTEREST**

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**APPENDIX. THE EUROPEAN VASCULAR RESEARCH COLLABORATIVE**

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1The European Vascular Research Collaborative, please see Appendix