



Professor Gianni Angelini
M.D.(Sienna), M.Ch.(Wales), F.R.C.S.(Glas), FETCS

BHF Professor of Cardiac Surgery and Director

Area of research

Cardiac Surgery

Office Room 81
Level 7,
Bristol Royal Infirmary, Upper Maudlin Street BS2 8HW
([See a map](#))

+44 (0) 117 34 23165
g.d.angelini@bristol.ac.uk

Summary

The overall goal of my research is to optimise the benefits of cardiac surgery on the heart and patient, while reducing the traumatic effects. Specific areas include:

Adult and Paediatric Cardiac Surgery

Clinical studies and trials to reduce myocardial injury and inflammation during adult cardiac surgery, and reperfusion injury in cyanotic children with congenital heart disease. We also try to reduce the inevitable adverse effects of surgical trauma and cardiopulmonary bypass, e.g. by comparing thoracotomy vs. sternotomy for off-pump coronary artery bypass (OPCAB) surgery, warm vs. cold-blood cardioplegia in on-pump coronary and valve surgery, general anaesthesia with high thoracic epidural vs. general anaesthesia alone, and reduced vs. conventional cross-clamp time in combined coronary and valve surgery.

Angiogenesis and regenerative medicine

Using adult vascular progenitor cells, both for use as cardiovascular biomarkers, and for improving therapies in the clinic.

Atherothrombosis

Carrying out preclinical studies and, subsequently, the first-in-man trials of drug gene-therapy and external stenting to treat vein graft stenosis.

Biography

Professor Angelini is regarded a world leader in three major areas of translation research: development, evaluation and establishment into clinical practice of off-pump coronary artery bypass (OPCAB) surgery; systemic inflammatory response (SIR) to cardiopulmonary bypass (CPB) and cardioprotective strategies for myocardial preservation during heart surgery; and saphenous vein bypass graft failure.

Over the last ten years Professor Angelini has been at the forefront of the cardiac surgery community worldwide. The evidence he has provided from basic science, RCTs and observational studies using one of the first (1996) high quality cardiac surgery databases in the UK has led to significant changes in adult and paediatric cardiac surgery practice.

Keywords

- Saphenous vein bypass graft failure
- Beating heart surgery
- Arterial revascularisation
- Mitral valve repair
- Cardiac surgery

Memberships

Organisations

[Bristol Medical School \(THS\)](#)

Other sites

- [Clinical-sciences](#)

Links

-  [Biomedical Research Unit for Cardiovascular Disease](#)

Recent publications

- Spencer, HL, Jover, E, Cathery, W, Avolio, E, Rodriguez-Arabaolaza, I, Thomas, AC, Alvino, VV, Sala-Newby, G, Dang, Z, Fagnano, M, Reni, C, Rowlinson, J, Vono, R, Spinetti, G, Beltrami, AP, Gargioli, C, Caporali, A, Angelini, G & Madeddu, P, 2019, '[Role of TPBG \(Trophoblast Glycoprotein\) Antigen in Human Pericyte Migratory and Angiogenic Activity](#)'. *Arteriosclerosis, Thrombosis, and Vascular Biology*, pp. ATVBAHA119312665
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- Ford, K, Anwar, M, Heys, R, Ahmed, EM, Caputo, M, Game, L, Reeves, B, Punjabi, P, Angelini, G, Petretto, E & Emanuelli, C, 2019, '[Optimisation of laboratory methods for whole transcriptomic RNA analyses in human left ventricular biopsies and blood samples of clinical relevance](#)'. *PLoS ONE*, vol 14.

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