University of Birmingham

Mr Babu Naidu

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Cardiovascular and Respiratory Sciences

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About

Mr Babu Naidu is based at the University Of Birmingham and an honanary Consultant Thoracic Surgeon based at Heart of England NHS foundation Trust, the largest thoracic surgical centre in England.

Qualifications

- 2006 C-Th, Intercollegiate Diploma Royal College of Surgeons
- 2004 MD, King's College (University of London)
- 1998 FRCSEd, Royal College of Surgeons Edinburgh
- 1998 FRCSEng, Royal College of Surgeons (RCS) England
- 1997 MMed Sci., Trauma Surgery (University of Birmingham)
- 1997 MBBS, King's College (University of London)

Biography

A native of Birmingham, he qualified and trained in the UK and undertook basic science research in lung injury at the University of Washington, Seattle, USA.

His clinical and research interests include:

- Enhanced recovery/rehabilitation for surgery
- Mechanism, detection and therapy of post operative acute lung injury
- Chest wall motion analysis novel technology and clinical uses
- Bio markers in lung (primary and metastatic) cancer
- Novel Surgical treatment for Emphysema

Teaching

Undergraduate teaching

- Second Year Medical Students Student Project 1 2013/14 Lung Cancer

Postgraduate teaching

- Master Course: Design, Analysis & Interpretation of Epidemiological Research (University of Warwick (2010-current)
- West Midlands Deanery – Respiratory Medicine and Cardiothoracic Surgery (2009-current) lectures
- Allied Health Professional
  Nurses and Physiotherapists on nationally accredited Thoracic Surgery workshop (2008-current)
- Regional Training Committee member West Midlands Deanery
- Development and organisation of ‘Masterclass in Thoracic Surgery’ internationally attended
- Faculty member Birmingham Cardiothoracic review course

Research

Lung cancer kills more than the next three most common malignancies combined; UK survival rates are very poor. Surgery remains the only cure. Three approaches to improve cancer outcomes are:

- Reducing complications so allowing safer surgery
- Improving diagnosis
- Preventing recurrence after surgery

Reducing Complications

- Postoperative pulmonary complications (PPC) are the most frequently observed complications and have significant clinical and economic impact. Modifying risk factors and targeted therapy (non invasive ventilation, minitracheostomy, incentive spirometry, pre and post operative rehabilitation ; the ROC programme.. see video)

are potential mitigating strategies we have studied;

- Post operative acute lung injury (PALI) surgery occurs rarely but accounts for many of the deaths after surgery. It is currently impossible to predict who will develop it and once developed is difficult to treat. Defining contributory factors to this inflammatory response via translational research may lead to targeted preventative treatment;
- Dysfunctional chest wall motion (CWM) may contribute to worse patient outcomes after 1) open versus minimally invasive surgery (MIS); and 2) flexible versus rigid chest wall replacement (in cancers involving chest wall). Dynamic CWM analysis measures volume variations and coordination of thoracoabdominal components and may be used to target therapy. We are using several technologies to measure this including Microsoft Kinnect;
- Acute pain following surgery can lead to complications. Thoracic epidural is the gold standard for pain relief but it has side effects which could be avoided by the use of an alternate analgesic method - paravertebral blockade.

Improving diagnosis

- Understanding how Lung Diseases develop relies on tissue to provide primary cells and a tissue bank. These are facilitated by pooling of expertise and resources in the Midlands Lung Tissue Collaboration (MLTC). This programme has for the last 7 years has used the otherwise discarded tissue after lung surgery;
- Carcinoma in lung biomarkers trial (Club) could help diagnose and define potential of spread of cancer through analysis of protein expression in serum or blood before and after surgery. This on-going Cancer Research UK project has banked serum samples from patients over the last 12 years.

Reducing Recurrence

- Cancer-specific antigens, delivered as recombinant proteins and combined with potent immunological stimulants represent an entirely novel approach to the treatment of cancer. They aim at the recognition and elimination of cancerous cells by the patient's own immune system thus preventing relapse of cancer after surgery. We are involved in two such studies.

Though focused on cancer many of these projects also relevant and involve non cancer patients.

Other activities

- 2013 to current - National Advisor Enhanced Recovery in Thoracic Surgery (Department of Health)
- 2010 to current - Member LORD Lung cancer CSG (NCRN)
- 2010 to current - Lead of Thoracic surgery Research Collaborative
- 2010 to current - Member UK Lung cancer coalition
- 2009 to current - Surgical Representative Midlands Thoracic Society

Publications

- Acosta J, Bradley A, Raja V, Aliverti A, Badiyani S, Motta A, Moriconi S, Parker K, Rajesh P and Naidu B (2013) **Exercise improvement after pectus excavatum repair is not related to chest wall function (http://www.ncbi.nlm.nih.gov/pubmed/?term=24067751)** . *Eur J Cardiothorac Surg* [Epub ahead of print]
- Evans RG, Ndunge OB and Naidu B (2013) **A novel two-hit rodent model of postoperative acute lung injury: priming the immune system leads to an exaggerated injury after pneumonectomy (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1093%2Ficvts%2Fivt077)** . *Interact Cardiovasc Thorac Surg* 16(6):844-8
- Jayaramakrishnan K, Wotton R, Bradley A and Naidu B (2013) **Does repair of pectus excavatum improve cardiopulmonary function (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1093%2Ficvts%2Fivt045)** ? Interact Cardiovasc Thorac Surg 16(6):865-70
- Agostini P, Naidu B, Cieslik H, Steyn R, Rajesh PB, Bishay E, Kalkat MS and Singh S (2013) **Effectiveness of incentive spirometry in patients following thoracotomy and lung resection including those at high risk for developing pulmonary complications (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1136%2Fthoraxjnl-2012-202785)** . *Thorax* 68(6):580-5
- Agostini P, Reeve J, Dromard S, Singh S, Steyn RS and Naidu B (2013) **A survey of physiotherapeutic provision for patients undergoing thoracic surgery in the UK (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1016%2Fj.physio.2011.11.001)** . *Physiotherapy* 99(1):56-62
- Evans RG, Naidu B, Rajpoot NM, Epstein D and Khan M (2012) **Toponome imaging system: multiplex biomarkers in oncology (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1016%2Fj.molmed.2012.10.003)** . *Trends Mol Med* 18(12):723-31
- Barua A, Vaughan P, Wotton R and Naidu B (2012) **Do endobronchial valves improve outcomes in patients with emphysema (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1093%2Ficvts%2Fivs371)** ? *Interact Cardiovasc Thorac Surg* 15(6):1072-6
- Evans RG and Naidu B (2012) **Does a conservative fluid management strategy in the perioperative management of lung resection patients reduce the risk of acute lung injury (http://www.ncbi.nlm.nih.gov/pubmed/?term=10.1093%2Ficvts%2Fivs175)** ? *Interact Cardiovasc Thorac Surg* 15(3):498-504