

CURRICULUM VITAE

MR MARK GEORGE BSc MS FRCS (Gen)

**Research
Bursary**

British Journal of Surgery Research Bursary 1998. Value £10,000

‘Circulating angiogenic factors for predicting response to treatment in colorectal cancer patients’

M.S. Thesis

Indirect assessment of angiogenesis in colorectal cancer using circulating vascular endothelial growth factor and dynamic contrast enhanced magnetic resonance imaging

The assessment of angiogenesis to date has been assessed directly by immunohistochemical staining of tumour vessels and angiogenic cytokines, or by mRNA expression of these cytokines. VEGF is the most important of the angiogenic cytokines and has important functions for endothelial cell growth and vascular permeability.

It is now possible to assess angiogenesis using surrogate markers such as circulating levels of VEGF and dynamic contrast enhanced magnetic resonance imaging (DCE-MRI). These methods do not require tumour tissue and therefore can be used pre-operatively and in the case of DCE-MRI allow a functional rather than anatomical measurement of angiogenesis.

The mRNA expression of VEGF-A, the two lymphangiogenic cytokines VEGF-C, VEGF-D and their two major receptors, VEGFR-2 and VEGFR-3, were measured in normal mucosa, adenomatous polyps and colorectal cancers by RT-PCR, with protein expression confirmed by immunohistochemistry. VEGF-A and VEGF-C were significantly raised in CRCs compared to normal mucosa, however VEGF-D was significantly decreased in both polyps and CRCs compared to normal mucosa. VEGF-A, but not VEGF-C or VEGF-D, was significantly higher in node positive tumours compared to node-negative tumours. This suggested that the balance of VEGF-A, VEGF-C and VEGF-D might be important in tumour progression through the adenoma-carcinoma sequence, with VEGF-A apparently being the most important for lymphatic spread.

Serum and plasma VEGF-A levels in CRC patients confirmed the correlation between serum VEGF and platelet count, and demonstrated that plasma values lie at the lower limit of sensitivity of the currently available ELISA. Therefore serum VEGF/platelet, which increased with advancing Dukes' stage, was the most appropriate method of expressing circulating VEGF levels. Comparison of serum VEGF/platelet and mRNA VEGF expression showed a significant correlation, suggesting an association between levels in the tumours and the peripheral circulation.

DCE-MRI was used to assess a measure of tumour permeability (K^{trans}) in 18 patients with T3/T4 tumours. Changes in circulating VEGF and K^{trans} were measured during pre-operative chemoradiotherapy with response assessed radiologically. Pre-treatment serum VEGF/platelet levels were not statistically different between the two groups. Responsive tumours had significantly higher permeability compared with non-responsive tumours. There was a significant decrease in K^{trans} in responsive tumours with treatment. Serum VEGF/platelet was significantly higher in non-responsive tumours during chemoradiotherapy compared with responsive tumours. The difference in pre-treatment permeability of responsive and non-responsive tumours may allow pre-selection of appropriate tumours for these regimes, with low permeability tumours being considered for novel therapies.

**Travelling
Fellowship**

Awarded from the Coloproctology section of Royal Society of Medicine.
Attended the Cleveland Clinic, Florida and The Tripartite meeting in
Washington 1999.

At the Cleveland Clinic there was live link-up with theatre and the
demonstration of laparoscopic colonic resection, perineal
proctosigmoidectomy with levatorplasty and sphincter repair. The next two
days consisted of oral presentation from British and American
coloproctologists.

Courses

2003 Laparoscopic colorectal day, Colchester
2003 Laparoscopic colorectal course, Dundee
2002 Laparoscopic colorectal surgery, Hamburg
2000 Clinical Management Course, Keele University
1998 Advanced techniques in pelvic surgery, RCS
1997 Coloproctology Lecture course, St Mark's Hospital
1996 Advanced Colorectal workshop, St Mark's Hospital
1993 Advanced Trauma Life Support, St George's Hospital
1993 Anastomosis workshop, Chester
1992 A&E course, Central Middlesex Hospital
Radiology in A&E, Northwick Park Hospital
Burns and Plastics in A&E, East Grinstead

**Association
Memberships**

Association of Coloproctology
Association of Surgeons
Association of Surgeons in Training
Royal Society of Medicine
Coloproctology section
Surgery section
Clinical section
Medical Defence Union

Meetings

I regularly attend the annual meetings of the Association of Surgeons and
Coloproctologists, as well as the various sections of the Royal Society of
Medicine.

I am President of the South London and West Kent Ileostomy Association
and enjoy supporting their local meetings.

Locally I have presented at South East Thames Coloproctology Chapter
meetings.

Publications

- **Anticoagulant-responsive pyoderma gangrenosum associated with an underlying prothrombotic dysfibrinogenaemia**
SI Chaudry, **ML George**, B Madans, MM Black
British Journal of Dermatology 2005, 153: 1081-3
- **Endoscopic sympathectomy in the treatment of facial blushing**
A Adair, **ML George**, R Camprodon, JA Broadfield, JA Rennie
Annals of the Royal College of Surgeons of England 2005, 87(5):358-360
- **Molecular pharmacology of cancer chemotherapy in human rectal cancer by global gene expression profiling**
PA Clarke, **ML George**, S Easdale, D Cunningham, RI Swift, ME Hill, DM Tait, PA Workman
Cancer Research 2003, 63(20): 6855-6863
- **Use of MMP-2 and MMP-9 levels as a surrogate for tumour expression in colorectal cancer patients**
MG Tutton, **ML George**, SA Eccles, RI Swift, AM Abulafi
International Journal of Cancer 2003, 107(4): 541-550
- **Stapled anopexy in the treatment of anal varices – report of a case**
S Biswas, **ML George**, AJM Leather
Diseases of the Colon and Rectum 2003, 46: 1284-1285
- **Diffusion MRI for prediction of response of rectal cancer to chemoradiation**
ASK Dzik-Jurasz, C Domenig, **ML George**, J Wolber, A Padhani, G Brown, S Doran.
Lancet, 2002, 360: 307-308

- **Plasma basic fibroblast factor levels in colorectal cancer: a clinically useful test?**

ML George, MG Tutton, AM Abulafi, SA Eccles, RI Swift

Clinical and Experimental Metastasis 2002, 19(8): 735-8

- **Human rectal adenocarcinoma: demonstration of ¹H-MR spectra in vivo at 1.5 T**

ASK Dzik-Jurasz, P Murphy, ML George, T Prock, DJ Collins, RI Swift, MO Leach, IJ Rowland

Magnetic Resonance in Medicine 2002, 47(4): 809-811

- **Colonoscopy in older patients: a safe and sound practice**

ML George, MG Tutton, VV Jadhav, AM Abulafi, RI Swift

Age Ageing 2002, 31: 80-81

- **Non-invasive methods of assessing angiogenesis and their value in predicting response to treatment in colorectal cancer**

ML George, ASK Dzik-Jurasz, AR Padhani, G Brown, DM Tait, SA Eccles, RI Swift

British Journal of Surgery 2001, 88: 1628-1636

- **VEGF A, C and D in colorectal cancer progression**

ML George, MG Tutton, F Janssen, A Arnaout, A M Abulafi, SA Eccles, RI Swift

Neoplasia 2001, 3(5): 420-427

- **Inhibition of human *Kirsten-Ras* expression with rationally selected *Kirsten-Ras* antisense oligonucleotides in colorectal cancer**

PJ Ross, ML George, D Cunningham, F Distefano, HJN Andreyev, P Workman, PA Clarke

Molecular Cancer Therapeutics, 2001, 1: 29-41

- **Solitary pancreatic metastasis from a primary colonic tumor detected by PET scan: report of a case.**

MG Tutton, **ML George**, ME Hill, AM Abulafi.

Diseases of the Colon and Rectum 2001; 44:288-29

- **Correlation of plasma and serum vascular endothelial growth factor (VEGF) levels with platelet count in colorectal cancer: clinical evidence of platelet scavenging?**

ML George, SA Eccles, MG Tutton, AM Abulafi, RI Swift.

Clinical Cancer Research 2000, 6 (8): 3147-52

- **The use of neoadjuvant CMF to avoid mastectomy**

ML George, P Hale, J Gumpert, B Hogbin, G Deutch, A Yelland

European Journal of Surgical Oncology 1999, 25 (1): 50-53

- **Thoracoscopic Sympathectomy: Indications and complications**

ML George and JA Rennie

Surgery Technology International 1999, VIII: 158-162

Correspondence

- **Clinical Cancer Research 2001, 7 (2): 444**
ML George, SA Eccles, G Box, MG Tutton, AM Abulafi, RI Swift
- **Clinical Cancer Research 2001, 7 (5): 1483**
ML George, SA Eccles, G Box, MG Tutton, AM Abulafi, RI Swift

Published
Abstracts

Molecular pharmacology of colorectal cancer chemotherapy by gene expression profiling of serial tumour biopsies

P Clarke, **ML George**, S Easdale, D Cunningham, RI Swift, M Hill, PA Workman

Proceedings of the American Association of Cancer Research, 2002

Evaluation of Endostatin and VEGF as markers of angiogenic potential in colorectal cancer

A Chopada, G Nash, TM Raymond, **ML George**, SA Eccles, AM Abulafi, RI Swift

Colorectal Disease 2002, 4 Suppl 1: P009

Gelatinase A (MMP-2) expression is a marker of invasion in colorectal cancer

MG Tutton, **ML George**, SA Eccles, RI Swift, AM Abulafi

Colorectal Disease 2001, 3 Suppl 1: 11

CD44 V3, 8-10 in prognosis of colorectal cancer and serum levels as a measure of tumour expression

MG Tutton, **ML George**, SA Eccles, RI Swift, AM Abulafi

British Journal of Cancer 2000, 83 Suppl 1: 19 (4.7)

The role of PET in detection of recurrent and metastatic colorectal cancer

MG Tutton, **ML George**, S Hain, D Cunningham, ME Hill, AM Abulafi

British Journal of Surgery 2000, 87 Suppl 1: P016

Elevation of basic fibroblast growth factor (bFGF) in plasma occurs late in the adenoma-carcinoma sequence of colorectal cancer

ML George, MG Tutton, AM Abulafi, SA Eccles, RI Swift

Clinical & Experimental Metastasis 1999, 17 (9): P141

Changes in plasma vascular endothelial growth factor (VEGF) and basic fibroblast growth factor (bFGF) following colorectal resection.

ML George, SA Eccles and RI Swift

British Journal of Cancer 1999, 80 Suppl 2: P236

Fall in basic fibroblast growth factor (bFGF) following colorectal cancer resection.

ML George, SA Eccles and RI Swift.

Colorectal Disease 1999, 1 Suppl 1: P17

Colonoscopy in the elderly: The difficulties and yield.

ML George, MG Tutton, AM Abulafi and RI Swift

Colorectal Disease 1999, 1 Suppl 1: P76

Functional outcome following laparoscopic rectopexy for rectal intussusception

MLGeorge and RI Swift

Colorectal Disease 1999, 1 Suppl 1: P93

Maintenance of erythrocyte flexibility by Haemacel during cardiac bypass surgery.

JA Sirs, **ML George**, B Glenville, R de L Stanbridge, J Jones, A Atkins, J Powell.

Int. J. Micro circ. Clin. Exp. 1990, 9: 127

The effect of gelatin derivatives on human erythrocyte flexibility

ML George and JA Sirs

J. Physiol. 1989, 413:12P

Presentations

Royal Society of Medicine, Section of Surgery 2005

Norman Tanner prize

Laparostomy formation in colorectal patients and their subsequent long term management

Royal Society of Medicine, Section of Coloproctology 2004

Can haematological indices predict positive findings of endoscopies performed for anaemic patients?

AMP Schizas, R Reid, ML George

Moynihan Prize Presentation, Association of Surgeons, Birmingham 2001

Dynamic contrast MRI (DCMRI) assessment of tumour permeability in locally advanced rectal cancer: A prognostic indicator for response to chemoradiotherapy

ML George, ASK Dzik-Jurasz, G Brown, AR Padhani, J Husband, MO Leach, IJ Rowland, ME Hill, DC Cunningham, D Tait, SA Eccles, RI Swift

British Cancer Research Meeting, Brighton 2000

Comparison of vascular permeability measured by dynamic MRI and serum/plasma VEGF in locally advanced rectal cancer

ML George, ASK Dzik-Jurasz, A Padhani, MO Leach, IJ Rowland, SA Eccles, RI Swift

Society of Computed Body Tomography and Magnetic Resonance, California 2000

Toward integrating MR studies of cancer: combined functional imaging and ¹H-MRS of locally advanced rectal cancer

ASK Dzik-Jurasz, ML George, JE Husband, RI Swift, MO Leach, S Doran
Cum Laude Award for outstanding scientific paper on Cross Sectional Imaging

Surgical Research Society, Cardiff 2000

Correlation of plasma and serum vascular endothelial growth factor (VEGF) with platelet count in colorectal cancer (CRC): clinical evidence of platelet scavenging

ML George, M Tutton, MA Abulafi, SA Eccles and RI Swift.

**Association of Coloproctology of Great Britain and Ireland, Southport
1999**

Functional outcome following laparoscopic rectopexy for rectal
intussusception

ML George and R.I. Swift

5th International Breast Cancer Symposium, Nottingham 1997

Use of neoadjuvant CMF to avoid mastectomy

ML George, P. Hale, G. Deutch, A. Yelland, J. Gumpert and B.
Hogbin

Physiology Society, London 1989

The effect of gelatin derivatives on human erythrocyte
flexibility

ML George and JA Sirs

Clinical Experience

I have a broad general surgical experience and have focused on coloproctology for the past four years. The hospitals I have worked at have been busy and provided a good volume of work. I have done seven continuous years of surgical on call as a registrar and feel capable in managing both trauma and general surgical emergencies.

In the management of colorectal cancer patients I recognise the importance of a multi-disciplinary team approach, particularly with reference to pre-operative radiotherapy and feel that accurate pre-operative staging of disease, with MRI, is important. Following on from my research, I have a special interest in locally advanced rectal cancer with neoadjuvant treatment prior to surgery, and the subsequent difficulties of operating in an irradiated field.

In 2003 I spent two weeks at the MD Anderson Cancer Center and three weeks at the Mayo Clinic. This proved to be a fantastic learning experience seeing the pre-operative planning and surgery for abdominosacral resection and pelvic exenteration in recurrent rectal cancer. In my first two years at St Thomas' I have performed many multivisceral resections including total pelvic exenteration and posterior exenterations with VRAM vaginoplasty.

I have attended a number of laparoscopic colorectal courses and have started to perform laparoscopic resections for both benign and malignant disease. This will be a key area of colorectal surgery in the coming years. I offer laparoscopic hernia repair for bilateral and recurrent groin hernias.

I am a keen endoscopist and have performed over 2000 colonoscopies with many therapeutic and emergency procedures amongst these. I have an increasing experience of endoscopic polypectomy for large sessile polyps.

Teaching

I have experience in teaching both undergraduates and postgraduates. I have examined GKT medical students at the end of their clinical attachment and in their end of year OSCE.

I have taught and taken viva exams on the STEP course at the Royal College of Surgeons and have successfully coached several SHOs for their FRCS and MRCS examinations. I have also taught on the Basic Surgical Skills course run by the College for SHOs. I enjoy teaching SHOs and junior SpRs in theatre and intent to continue my commitment to teaching and improving the quality of training.

I have recently taken on the running of the St Thomas' MRCS course, which runs for three weeks and happens twice a year. This prepares SHO for the MRCS part II examination.

Management

I am clinical lead for the colorectal cancer multidisciplinary meeting and represent the Trust at the SE London Colorectal Tumour Working Group. I am also the lead for Research and Development for the Department of Surgery.

I have been involved in the Delivery of Excellence programme and have given clinical input on theatre gowns and sutures.

Audit Experience

I have made audit presentations at most of the hospitals I have trained in. In carrying out audit projects and attending regular audit meetings I have learnt that well constructed and thought out audit projects can be a powerful tool for improving the quality of care to patients, however poorly executed projects can be a wasted resource.

Interests

I enjoy sport particularly golf and skiing and still play hockey for invitational sides. I am interested in classic cars and try to keep my MGB roadster on the road and out of the garage. I enjoy playing the piano at home for personal relaxation.

I am Treasurer of the Consultant Club at St Thomas' and help arrange the events throughout the year.

Representative Honours:

University of London Hockey 1990,1991
United Hospitals Hockey 1989-91

Clubs:

SMHMS -Hockey Captain 1987-88
 -Cricket 1st XI
 -Golf Team

Positions Held:

Vice President, St Mary's Hospital Hockey Club
Students Union - Bar Manager 1987,1988
Secretary of the Rag Committee 1986
Summer Ball Committee 1986

Career Intentions

I am keen to develop a practise for locally advanced and recurrent rectal cancer at St Thomas' Hospital. This would be combined with continuing research into angiogenesis and dynamic MRI.

Referees

Mr J A Rennie
Consultant Surgeon
Kings College Hospital
Denmark Hill
London.

Mr A J M Leather
Consultant Surgeon
Kings College Hospital
Denmark Hill
London.

Mr M P Saunders
Consultant Surgeon
Eastbourne Hospital
Kings Drive
Eastbourne.
