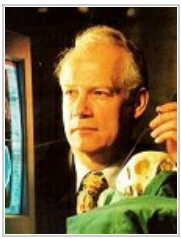
University of Birmingham

Professor Garth Cruickshank PhD, MBBS, FRCS(Ed), FRCS(Eng), FRCS(SN)

Professor Of Neurosurgery

School of Cancer Sciences (/schools/cancer/index.aspx)

Contact details



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About

Professor Garth Cruickshank is Professor of Neurosurgery in the School of Cancer Sciences.

Qualifications

- Professor of Neurosurgery and Consultant Neurosurgeon
- FRCS (SN) 1992
- FRCS (Ed) 1989 FRCS (Eng) 1989
- MBBS 1984
- PhD 1978
- BSc (Hons) 1973

Biography

Professor Cruickshank did his PhD in Pharmacology after completing a degree in biochemistry and physiology. He subsequently went on to do his medical degree at the Royal Free Hospital in London. Subsequently, he obtained his FRCS prior to specialist training in neurosurgery.

He worked at the renowned Institute of Neurological Sciences in Glasgow with Professors Jennett and Teasdale but diversified into the area of neuro-oncology early in his studies. He carried out the first intra-operative recording of fluorography oxygen levels in brain tumours and followed this up with other work related to our understanding of hypoxia in brain cancer.

In 1993 he became a Consultant Senior Lecturer in Neurosurgery in Glasgow and continued his work on development of oncolytic herpes viruses for the treatment of brain tumours in conjunction with Professor Moira Brown. This work led to an MRC supported phase 1 trial of HSV 1716 in brain tumours.

In 1997 he moved to the Chair of Neurosurgery in Birmingham. Here he has specialised in further research in brain tumour, has worked with the NCRI and European Association for Neuro-oncology to develop trials and services for brain tumour patients. He has worked extensively with a number of the UK brain tumour charities and has contributed to a number of government and allied developments in the delivery of neurosurgery and neuro-oncology through his work on NICE and other boards.

He has sat on the NCRI Clinical Studies Group for ten years and has recently taken over Chairmanship of the DVLA Neurology Medical Panel. As well as carrying out progressive surgery for the treatment of brain tumours and skull based tumours, he has a lead role in the provision of brain and CNS cancer services in the West Midlands as well as the delivery of neurosurgical services to this region.

Teaching

- Clinical mentor 2008 onwards
- Good Brain Bad Brain
- Neurology module MBBS 4th year
- Lecture on head injury to Dentists
- Miscellaneous under-graduate lectures
- Annual lectures on Neuro-anatomy to SurgSoc

Postgraduate supervision

- Multiple MD's over 14 years
- 2 current PhD's

Research

1990-1993

Research into the hypoxic nature of brain tumours using polygraphic methods.

1993 onwards
Research into the use of oncolytic herpes viruses into the treatment of malignant brain tumours leading to several phase 1 and 2 studies to a phase 2/3 trial commenced in Birmingham in 2005.

2007
Research into Boron Neutron Capture Therapy in conjunction with the Department of Medical Physics University Departments. This work has focused on understanding ways of improving the delivery of boronophenylalanine to brain tumour cells to enable dose escalation and improvement in response to radiation treatments.

This has led to detailed work on the LAT1 receptor and mechanisms that control its expression together with function studies on the behaviour of the LAT1 receptor under clinical conditions. A full phase 1 pharmacokinetic trial is currently underway involving the use of microdialysis, serial tumour biopsy and detailed pharmacokinetic studies in human subjects with brain tumours.

Other work has continued with the herpes virus studies into other ways in which oncolysis might be helpful and this has extended into looking at other markers for brain tumour response to treatment.

2008 onwards
The BNCT studies have been extended to look at dosimetry related to boronophenylalanine uptake and exposure to neutron beams. Further work has gone on in understanding issues to do with the service delivery for patients with brain and CNS tumours and new work has commenced on research into the functional significance of IDH1 and redox potentials echoing back to early work done on hypoxia.

The understanding that immuno-modulation may play a huge part in the long-term control of brain tumours has led to the development of a programme of work looking at the action of the multifunctional compound Decorin in controlling angiogenesis, immuno-suppression, immune modulation and tumour growth.

Currently, clinical trials are taking place to explore a number of translational techniques such as convection enhanced delivery: delivery of antisense compounds to control the release of TGF beta 2 in human tumours. Depo therapies with nano particles and drug eluting beads to deliver loco-regional Irinotecan for patients with recurrent gliomas and participation in commercial trials such as testing the impact of the additional anti-VEGF compounds such as Bevacizumab in conjunction with conventional chemo-radiation therapy in the treatment of primary malignant glioblastoma.

Other activities

- Chairman of DVLA Neurology Panel
- CSG Brain and CNS – Chair of Technology Subgroup
- SBNS Chair of Academic Committee
- SBNS Royal College Cancer Services Committee
- BNOS Council
- Advisor to NICE

Publications

Natalwala A, Bharkhada V, Noel G, Cruickshank G. Comparison of time taken from initial presentation to histological diagnosis of Glioblastoma Multiforme (GBM) in Birmingham, United Kingdom and Strasbourg, France. Clin Neurol Neurosurg. 2011 Jun;113(5):358-61. Epub 2011 Apr 5. PubMed PMID: 21470768.

Cruickshank GS, Ngoga D, Detta A, Green S, James ND, Wojnecki C, Doran J, Hardie J, Chester M, Graham N, Ghani Z, Halbert G, Elliot M, Ford S, Braithwaite R, Sheehan TM, Vickerman J, Lockyer N, Steinfeldt H, Croswell G, Chopra A, Sugar R, Boddy A. A cancer research UK pharmacokinetic study of BPA-mannitol in patients with high grade glioma to optimise uptake parameters for clinical trials of BNCT. Appl Radiat Isot. 2009 Jul;67(7-8 Suppl):S31-3. Epub 2009 Mar 26. PubMed PMID: 19447633.

Detta A, Cruickshank GS. L-amino acid transporter-1 and boronophenylalanine-based boron neutron capture therapy of human brain tumors. Cancer Res. 2009 Mar 1;69(5):2126-32. Epub 2009 Feb 24. PubMed PMID: 19244126.

Detta A, Harland J, Hanif I, Brown SM, Cruickshank G. Proliferative activity and in vitro replication of HSV1716 in human metastatic brain tumours. J Gene Med. 2003 Aug;5(8):681-9. PubMed PMID: 12898637.

Salous MN, Pycock D, Cruickshank GS. CBIT--context-based image transmission. IEEE Trans Inf Technol Biomed. 2001 Jun;5(2):159-70. PubMed PMID: 11420994.

Rampling R, Cruickshank G, Papanastassiou V, Nicoll J, Hadley D, Brennan D, Petty R, MacLean A, Harland J, McKie E, Mabbs R, Brown M. Toxicity evaluation of replication-competent herpes simplex virus (ICP 34.5 null mutant 1716) in patients with recurrent malignant glioma. Gene Ther. 2000 May;7(10):859-66. PubMed PMID: 10845724.

Brada M, Cruickshank G. Radiosurgery for brain tumours. BMJ. 1999 Feb 13;318(7181):411-2. PubMed PMID: 9974434; PubMed Central PMCID: PMC1114886.

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