Portsmouth Hospitals NHS
NHS Trust

Dr. Y. S. Nagar
Consultant Clinical Oncologist & Head
Department of Radiation Oncology
Queen Alexandra Hospital,
Southwick Hill Road, Cosham,
Portsmouth. PO6 3LY. U.K.

Date: 14th May 2013

To Whom it May Concern

This is to certify that Dr. Narendra Kumar, Assistant Professor, Department of Radiotherapy & Regional Cancer Centre PGIMER, Chandigarh 160012 India, has successfully completed 3 months fellowship from 15/02/2013 to 14/05/2013 at the Department of Clinical Oncology, Queen Alexandra Hospital, Portsmouth, United Kingdom under the International young Scientist Fellowship program of Indian Council of Medical Research (ICMR).

During this period Dr. Kumar had a good exposure and has gained experience in Image Guided Radiotherapy (IGRT), Intensity Modulated Radiotherapy (IMRT) and Brachytherapy for prostate cancers.

During his fellowship, Dr Kumar was found to be enthusiastic in learning the techniques and practicalities of Image Guided Radiotherapy (IGRT) for prostate cancer. He has observed the clinical assessment of patients in OPD, and was involved in contouring of various target volumes and organs at risk (OAR) on planning CT scan, treatment planning and quality analysis with medical Physicist, plan evaluation with the consultants and treatment execution on linear accelerator machines with the radiographers.

In addition, Dr. Kumar has also observed and learned the single step technique of adaptive Brachytherapy using radioactive Iodine (I^{125}) seeds permanent interstitial implant for the radical treatment of early stage carcinoma prostate.

I wish Dr. Narendra all success.

(Dr Yoodhvir Singh Nagar)

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REPORT OF HOST INSTITUTION

Date:14th May 2013

1	Name of the Consultant (under Whom training was carried out)	**Dr Y S Nagar,** Consultant and Head Department of Clinical Oncology
2	Name and address of host institution	Queen Alexandra Hospital Southwick Hill Road, Cosham Portsmouth, PO6 3LY, UK
3	Duration of fellowship	3 months, from 15.02.2013 – 14.05.2013
4	Brief highlights of achievement	Dr. Narendra Kumar , Assistant Professor, Department of Radiotherapy & Regional Cancer Center PGIMER, Chandigarh 160012 India, joined Department of Clinical Oncology, Queen Alexandra Hospital, Portsmouth, United Kingdom under the three months International young Scientist Fellowship program of Indian Council of Medical Research (ICMR). During this period Dr. Kumar had a good exposure and has gained experience in Image Guided Radiotherapy (IGRT), Intensity Modulated Radiotherapy (IMRT) and Brachytherapy for prostate cancers. During his fellowship, Dr Kumar was found to be enthusiastic in learning the techniques and practicalities of Image Guided Radiotherapy (IGRT) for prostate cancer. He has observed the clinical assessment of patients in OPD, and was involved in contouring of various target volumes and organs at risk (OAR) on planning CT scan, treatment planning and quality analysis with medical Physicist, plan evaluation with the consultants and treatment execution on linear accelerator machines with the radiographers.
5	Your assessment of the ICMR-IF	Dr Kumar was well received as a fellow in our department. He had developed excellent rapport with different staff members of the department. He was a excellant ambassador for the ICMR international fellowship. We would be very happy

		to receive further fellows through this fellowship scheme.
6	Any other comments	In addition to the IGRT Dr. Kumar has also observed and learned the single step technique of adaptive Brachytherapy using radioactive Iodine (I^{125}) seeds permanent interstitial implant for the radical treatment of early prostate cancer. Radioactive Iodine-125 implant is a very effective curative modality for prostate cancers. It aims to deliver very high dose of localized radiation to the prostate which cannot be achieved with any external beam radiotherapy technique. Brachytherapy results in much improvement in the side-effect profile and is a extremely well tolerated treatment with high cure rates. Currently I-125 implant is being done only in few centers in Asia and I believe is not available in India. ***Our team will be happy to provide necessary expertise and technical support to establish this facility in PGIMER Chandigarh in future if required.***

Dr Y S Nagar,
Consultant and Head
Department of Clinical Oncology
Queens Alexandra Hospital
Southwick Hill Road, Cosham
Portsmouth, PO6 3LY, UK

REPORT OF ICMR FELLOW

Report on participation of the ICMR International fellow (ICMR_IF) in Training / research abroad.

1. **Name and designation of ICMR_IF**	**Dr. Narendra Kumar, MD** Assistant Professor Department of Radiotherapy and Oncology
2. **Address**	Department of Radiotherapy and Regional Cancer Centre Post Graduate Institute of medical Education and Research (PGIMER), sector-12, Chandigarh-160012, India
3. **Frontline area of research in which training/research was carried out**	Image Guided Radiotherapy (IGRT) in Carcinoma Prostate
4. **Name & address of Professor/consultant and host institute**	**Dr Y. S. Nagar,** Consultant and Head Department of Clinical Oncology Queen Alexandra hospital, Southwick Hill Road, Cosham, Portsmouth. PO6 3LY. U.K. Tel: 00-44-2392286000, Ext-4783 (Secretary), Mobile: 00447914625960 E-mail: voodhvirsingh.nagar@porthosp.nhs.uk,
5. **Duration of Fellowship**	Three months (From 15/02/2013 to 14/05/2013)
6. **Highlights of work conducted**	I had joined the Department of Clinical Oncology, Queen Alexandra Hospital Portsmouth. United Kingdom under the three months International young Scientist Fellowship program of Indian Council of Medical Research (ICMR).

Technique / expertise acquired

I have gained experience in Image Guided Radiotherapy (IGRT), Intensity Modulated Radiotherapy (IMRT) and Brachytherapy for prostate cancer.

IGRT is the most sophisticated method of radiation treatment delivery currently available in the world, allowing much greater precision than proton therapy. This allows us to further maximize the radiation dose to the prostate and minimize the dose to the surrounding normal organs. Every radiation accelerator manufacturer is developing more and more precise technologies based on IGRT, to further enhance the accuracy of the treatments.

During my fellowship I have observed the clinical assessment of patients having carcinoma prostate in OPD. I was actively involved in the treatment of about 60 patients in 3 months tenure. I was involved in contouring of various target volumes and surrounding organ at risk (OAR) on planning CT scan with consultant, treatment planning and Quality analysis with medical Physicist, treatment plan evaluation with consultants and treatment execution on machines with the radiographer.

In addition to the IGRT, I have also learned the single step technique of adoptive Brachytherapy using radioactive Iodine (I125) seeds permanent interstitial implant for the radical treatment of early stage prostate cancer. Radioactive Iodine implant is a very effective curative modality for prostate cancers. It aims to deliver very high dose of localized radiation to the prostate which cannot be achieved with any external beam radiotherapy technique. Brachytherapy results in much

improvement in the side effect profile and is a extremely well tolerated treatment with high cure rates.

During my fellowship I had also attended 2nd ESTRO forum and Pre-conference workshop on *"Focal Therapy in carcinoma Prostate"* held in Geneva, Switzerland from 19th – 23rd April 2013.

Focal Therapy: In early stage carcinoma prostate the contemporary treatment options are either radical therapies which entail surgical removal or irradiation of the whole prostate, or active surveillance which leaves the cancer untreated until there is clinical evidence of progression.

In some cases, radical total-gland therapy can be considered overtreatment. While this approach offers superior oncologic control, the majority of men will experience long term, lifestyle altering side effects such as incontinence or sexual dysfunction and will find the outcome bothersome. On the other end of the treatment spectrum is active surveillance which, in theory, allows the patient to defer treatment until PSA or biopsy indicates progression. In many cases however, active surveillance is poorly adhered to by patients and physicians, and many men seek radical treatment.

Focal therapy (FT) can be viewed as the middle ground between radical therapy and active surveillance - cancer control without the invasiveness or side effects of surgery. Although this approach is new for prostate cancer, FT is used extensively for other diseases, for example lumpectomy for breast cancer and cryotherapy for cervical cancer. The goal of FT is to destroy only the most aggressive tumor while leaving the surrounding healthy

tissue unaffected. Even if additional, smaller tumours remain within the prostate, these are unlikely to cause progression because they contain less aggressive disease.

I also participated in one day workshop " Foundation course in IMRT for Clinical Oncologist" organized by National Cancer Action Team, Royal College of Radiologist UK at Novotel Southampton on 16th March 2013.

Proposed utilization of the experience in India

In the department of radiation oncology and Regional Cancer Center at PGIMER, Linear accelerator with IGRT facility is in process of getting installed and will be functional by the end of year 2013. This training will help us to treat carcinoma prostate with state of art technology IGRT.

Dr Narendra Kumar, MD
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ICMR Sanction No.

No.INDO/FRC/452(y-17)/2012-13IHD

Signature of ICMR-IF