Cancer Institute wishes everyone a very happy and prosperous New Year 2016
On the eve of New Year, I wish to take the opportunity to wish all our staff a very Happy and Successful New Year. First our heartfelt thanks to all our donors and volunteers for their continuing support and enabling us to maintain our ethos. Our special thanks and gratitude to all members of the Mahesh Memorial Trust. They have almost became a part of the Institute. The services of Mr. Chandrasekar and Mr. Ramasamy, Civil Engineer Volunteers in our Diamond Jubilee Building Project are immeasurable. They are almost irreplaceable. Our deep gratitude to both of them. We thank our patients who have given us the opportunity to be of service.

It is with great sorrow and anguish that I have to share a few words on the natural calamity that overtook Chennai and the immeasurable suffering of people all over Tamil Nadu. We are grateful to God that the Institute escaped major morbidities. We learnt a great deal. We are also keenly aware of the suffering of thousands of people and nearer home, our staff who suffered inundation with water in their homes, loss of material and many more. We have done our best to the low income staff. We thank God for surviving Nature's fury with minimal morbidity to the Institute. Many of us believe it is the blessing of our Adviser Dr. Krishnamurthi. We are grateful to innumerable volunteers known and unknown for their continuous enquiries and support for our patients and Institute.

We successfully completed our Diamond Jubilee year, a land mark event in the life history of the Institute. We rededicated ourselves to the six facets of the Diamond Jubilee – Commitment, Cure, Care, Compassion, Challenge and Change. The Jubilee year highlighted a large number of academic activities and initiatives towards enhancing leadership role of the Institute in the areas of cancer control, cancer education and research.

We are entering our 61st year. I take the opportunity to reiterate the need for working as a team, in a mission mode to believe in dignity of labor and that no work is inferior or superior. Your pride, commitment and passion in your work must be contagious – you must be a role model and create more role models from your team. What we need today is more committed and motivated staff.

As a charitable organisation, I can only say that, we have lived and learnt to live with financial constraints and attempt to control our Destiny by stringent expenditure control and financial discipline. I hope our staff appreciate the significant improvements in service conditions, increasing potential for work and remuneration structure. The administration looks forward to committed staff for continuing growth of the Institute.

What is our aspiration for the future? In my perception, we should strive to continue as a model service organization built around core values, illustrating the benefits of team work, encouraging practice of inter disciplinary interaction to build and sustain service excellence and integrate research with clinical practice. We must create an environment where patients are heard and focus on what is best for the patients.
Dr. V. Shanta delivered the 6th DR. S. Krishnamurthi Memorial Oration on 12.09.2015, she said “I do not call it an oration since it is not an academic erudite, scientific presentation on cancer care and control which I have learnt and practiced over the last 6 decades but a true factual narration of the soul stirring story of the origin and growth of Cancer Institute, its pioneering activities, the challenges and obstacles of a voluntary institution and what I believe is the contribution of the Cancer Institute (WIA) to the country. It is the vision of Dr. Krishnamurthi that has made this possible and to whom the present and future generations of oncologists are indebted to”.

Dr. J. Radhakrishnan, State health secretary was the chief guest. Dr. A. V. Laxmanan Adviser II, in his introductory speech said, “In an era where medicare is increasingly becoming commercialized, Dr. Shanta is striving to stay afloat and ensure that the Institute retains its basic ethos of “Service To All”.

**Transcript from Dr. V. Shanta’s speech**

Reminiscing over the last 6 decades I am amazed to see how patient centric the growth of the Institute has been, how many of the efforts have been pioneering ones, many of them firsts to our credit when none existed, everyone of these was the brain child of Dr. Krishnamurthi. The object of the Reminiscence is reliving the years, a memory recall to reiterate the six facets of the Institute, commitment, cure, care, compassion, challenge and change and highlight a few of the strong convictions of Dr. Krishnamurthi.

Dr. Shanta threw light on the many hurdles they had to overcome to ensure the Institute became renowned for its cancer care and research in the country. She highlighted the myriad difficulties a voluntary organisation faced for recognition from the government during the 1950s, the apathy and lack of awareness and their struggles to get equipment and begin research.

She added “many a times, Dr. Krishnamurti and I often wondered what made us continue during such hardships and I realized it was the belief in service and that having started, we needed to keep going”, prejudices between official and voluntary organizations continue but the benefits people may get must be the primary focus and thanked the State government for extending its help which is approved under the ‘tertiary care for cancer’ scheme to the Institute.

we have to continue and follow the tenets of the Bhagwat Gita – Action is thy duty, fruit is not thy concern.
World Radiography Day – 07.11.15

World Radiography Day is celebrated on 8th November. The date marks the anniversary of the discovery of x-radiation by William Roentgen in 1895.

On the occasion of World Radiography Day, Department of Radio Diagnosis and Imaging Sciences in collaboration with departments of Radiotherapy and Nuclear Medicine conducted a half day CME on 7th November. Dr. Vandana Mahajan welcomed the gathering, Chairman Dr. V. Shanta in her inaugural address said” The vital role of radiology and radiography in health care needs no reiteration. To keep in touch and be aware and utility of the advances, enhancing ones knowledge, has to be in a continuing process. The object will be the benefit to the patient. Radiographers have to be guided by the same values and principles of the Medical profession, take the Hippocrates oath and have to abide by the oath. Basically the guiding principle is the concept of service to humanity and respect to human life and to do no harm or malice.

Senior technologists from city hospitals delivered lectures on basics of Radio-diagnosis and Imaging Sciences, Radiotherapy and Nuclear Medicine equipments, procedures and emergency care.

Over 150 delegates participated in the event.

Procedures And Innovative Techniques Adopted in 2015 at the Department

- Robotic-guided biopsies and newer CT-guided interventional procedures and Catheter placements.
- PTBD, Nephrostomy and Catheter placements under ultra-sound guidance.
- Radio Frequency Ablation and Alcoholic Ablation procedures.
- A 1.5 Tesla MRI unit has been functioning in the department, with dedicated protocols for Rectal and Prostate carcinomas and Gynaecological(Uterine and Cervical) malignancies.
- Dedicated CT and MR angiographic procedures for enhanced tumour detection.
- CT and MRI volumetric analysis is being performed for liver tumours.
- Virtual Bronchoscopy, Colonoscopy and Dentascan.
### ACADEMICS

#### Lecture

- Dr. Ramakrishnan, “Preoperative evaluation and selection of patients for CRS and HIPEC” and demonstrated a Video on “Extralevator APE” at NATCON IASO 2015 in Bhubaneshwar in September.

- Dr. Arvind Krishnamurthy, on “HPV in Oral Cancers” and “Newer technologies on H & N Cancer management” at NATCON-IASO 2015 in Bhubaneswahwar in September.

- Dr. Prasant Ganesan “Interpretation of Journal article” at the Young Medical Oncologist meeting at Hyderabad in September.

- Dr. Surendran, “Role of counseling in cancer care at The Banyan Academy of Leadership in Mental Health Chennai in September.

- Dr. Surendran, “New normal- life after cancer’ at Rose Day Celebrations, KMCH, Coimbatore in September.

- Dr. Surendran, “Enhancing quality of life of patients with chronic illness-psychosocial perspective” and chaired session psychology for health and well being at the Centenary Conference on Psychology in Kolkata in October.

- Ms. Soundara Viveka presented, “Validation of EMT markers in oral tongue squamous cell carcinoma shows MMP9 overexpression as an indicator of recurrence and poorer Disease free survival at the NextGen Genomics-Biology at Bioinformatics and Technologies 2015 conference in Hyderabad in October.

- Dr. Ramakrishnan, “Indian publications and data on minimally invasive surgery for colorectal cancers” and panelist “Optimising radiation treatment for rectal cancers” at ISO-ISMPO biennial meeting in Mumbai in November.

- Dr. Arvind Krishnamurthy, “Surgical approach to borderline resectable sopageal cancer” and chaired a session on CME of Esophagus atIASGCON 2015 in Pune in November.

- Dr. Arvind Krishnamurthy, Debate against mediastinoscopy is not required in era of staging EBUS and PET CT at the Biennial Joint Conference of ISMPO and ISO in Mumbai in November.


- Dr. Anjana Joel poster, “Gemcitabine ,Vinorelbine,Dexa methasone(GV Dexa) as second line salvage regimen in relapsed and refractory hodkins lymphoma at the 57th American society of Haematology Meeting and Exposition at Orlando, Florida in December and was awarded the Abstract Achievement Award by the American Society of Haematology.

- Dr. Chandra Kumar, completed Diploma Course in Tissue Banking at 16th International Atomic Energy Association (IAEA)/National University Singapore (NUS),between October 2014 to October 2015 with Distinction.

### International Meeting

- Dr. Vijayalakshmi presented “Use of Fast Transfer Analysis cartridges for molecular high risk HPV testing in cervical cancer prevention program in South India – A feasibility study at the 30th International Papillomavirus Conference – HPV 2015 Lisbon, Portugal in September.

- Dr. Balasubramanian, poster, “Breast conservation surgery A 7years single institutional analysis of treatment outcome” at European Cancer Congress, Vienna in September.


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Center News

- Bio Chemistry Department along with Tamil Nadu Chapter of ACBI conducted CME at the Institute in October, Dr. A. Rathinavelu, the recipient of 2015 Fulbright Scholarship and the Executive Director, Rumbaugh Goodwin Institute for Cancer Research, Nova Southeastern University, Florida, USA spoke on “New Horizons and challenges in Cancer Treatment”.
- Department of Psycho Oncology organized:
  - Lecture by Dr. Sridhar Vaitheswaran MD, MRC Psych, Consultant Psychiatrist, Schizophrenia Research Foundation, India on “Management of Psychological Issues of Patients with Cancer” and workshop emphasizing the role of priests in cancer control for the new priests from Sacred Heart Seminary in September at the Institute.
  - Awareness program emphasizing the “Role of Society in a Palliative Care” and 3 day intensive workshop on “Tobacco Cessation Intervention for Health Care Professionals” in October.
- Stoma Care: Support group consisting of surgical oncologist, nurse and psycho oncologist has been initiated for patients posted for colostomy surgery and those with a stoma bag. Survivors and patients are educated about stoma care and dealing with adjustment and psychosocial issues.
- Prof. Ganesan talk on Recent advances in pancreatic cancer. Chemotherapy in pancreatic cancer at CME on pancreatic cancer at the Institute November.
- Dr. Vinayagmoorthy from Catholic University of South Korea, “Profiling of determinants of Erlotinib toxicity in Lung cancer patients in Indian population with genomic and proteomic approach” in November at Cancer Institute.
- Dr. Manoj Garg Centre from Cancer Sciences University of Singapore, on Cancer genetics at the Institute in December.
- Prof. John Sweetenham’s, on recent advances in Hodgkin disease in November.
- Dr. Venkataraman, Diet and Cancer at CME organised by psycho oncology department in September.

Training & Awareness Program on Tobacco control and Primary Prevention of Cancer was conducted for around 1400 participants of various organizations, schools and colleges - Allision Transmission India Pvt.Ltd, Dover India Pvt.Ltd, Kovai Medical Center and Hospital, Banyan Academy of Leadership in Mental Health, Saradha Krishna Homeopathy Medical College and Hospital, GYPYSY Community Program, HCL foundation, Government & private College and schools and NSS officers from different Universities of Tamil Nadu and Puducherry by Department of Psycho Oncology.

International Meeting Contd...

Dr. Rajaram Burrah received the International Mentorship Award and presented poster, “Role of selective EBUS-TBNA mediastinal sampling in early lung cancer at 16th World Conference on Lung Cancer in Denver USA in October and visited the Thoracic Surgery department in New York Langone Medical Center as part of the award.

The study done during my Fellowship in Thoracic Surgery at the Royal Melbourne Hospital, Australia looked at the role of EBUS staging of the mediastinum for early lung cancer. The conclusions were that selective EBUS-TBNA mediastinal staging in early lung cancer is feasible and has an acceptable NPV. The study also draws attention to the potentially avoidable limitations of selective EBUS mediastinal lymphnode sampling.
• Dr. Arvind Krishnamurthy, panelist in the Session on Risk reducing strategies among women at high risk of developing breast cancer: can we define risk accurately? at the 2nd Brinker awardee Breast Cancer symposium in Bengaluru in November.

• Dr. Arvind Krishnamurthy moderated a Live Operative Session on Breast Conservation and Sentinel Node Biopsy at Onco-Surg 2015 at Tata Memorial Center in Mumbai in November.

• Dr. Arivazhagan attended the 42nd National conference of ACBI at Chandigarh in December.

• **Faculty and Post Graduates presented at Heamatocon 2015, Annual Conference of the Indian Society of Hematology and Blood transfusion in Benagaluru in November.**

  Dr.Prasant Ganesan, lecture on the “Indian Experience with treatment of Non Hodgkins Lymphoma”

  Dr.Harsh vardhan atreya, poster,”Dose-adjusted R-EPOCH chemotherapy in high grade B cell non-hodgkin’s lymphomas-experience from India”

  Dr.Aditya Neville, poster,”outcomes in Multiple Myeloma post HDCT and Autologous BMT: A Single Institute Experience” & poster”Carbapenem resistant MDR Gram Negative Sepsis during Induction therapy in AML” & won 2nd prize in Hematology quiz.

  Dr.Jayachandran,”Outcomes of adult Acute Myeloid Leukemia patients treated in a tertiary cancer centre from South India.

  Dr.Shoufeez, “experience with ICICLE protocol in paediatric ALL from a tertiary care centre in south india”.

  Dr.Manu Prasad, “ Nilotinib as second line agent in CML,Preliminary experience from a tertiary cancer centre in India”.

  Dr.Prasant Ganesan, “Early Phase Clinical Trials in Oncology” and on “newer Trial designs in Oncology” at the Workshop on clinical trials conducted at AIIMS, New Delhi in December.

  Dr.Siddhart Totadri, “tumor lysis syndrome and hyper leucocytosis in workshops held in SRMC & Mehta childrens hospital, Chennai in November.

  Dr. Prateek Tiwari won 1st Prize worth 1 lac rupees in the quiz conducted at the National CME on Ovarian Cancer at Mumbai in December.

  Prof.Ganesan, Cancer A panoramic view and mathematical issues at Institute of mathematical Sciences Taramani in November.

  Dr. Balasubramanian paper, “Prognostic factors and survival outcomes of surgical resection of huge hepatocellular carcinoma” at ISO - ISMPO conference, Mumbai in November & was awarded the best paper under ISO category.
Today pediatric cancers are a success story. Standard state of art treatment given to eligible children (i.e., children with treatable disease – not advanced) come within scope of curability. This curability can be long term. I am proud that the Cancer Institute (WIA) was a pioneer in establishing the 1st Pediatric Oncology Unit in 1960. At the Cancer Institute (WIA) the success rate which was just 20% in early 1950-60s is today near on 65% When I say success rate, I talk about virtual normal longevity i.e children after treatment go to their routine mile stones – schooling, other education depending on family circumstances, marriage and social life like as any other individual.

My special dream is to ensure that every child, at least in Tamilnadu should have access to such treatment. It should not be difficult. Annual pediatric ALL in Tamilnadu is above 365. At least 250 come with scope of curability. If we can get a corpus, from which treatment expenses can be met for patient taking treatment in standard well established hospitals, practicing ethical protocol treatment, it will be a great achievement.

**Publications**

- Amudha Periasamy, Gopal Gopisetty, Sridevi Veluswami, Malliga Joyimallaya, Rajkumar Thangarajan – Identification of candidate biomarker mass (m/z) ranges in serious ovarian adenocarcinoma using matrix assited lasser desorption/ ionization time of flight mass spectrometry profiling. Biomarkers, August 2015.
- Krishnamurthy Arvind, contributed to a Book Chapter on “Tumors of the Small Intestine” for the Textbook, “Modern GI Oncology” Elsevier Publishers.
Is cancer preventable?

There is incontrovertible evidence that 60% of the cancers that occur today can be prevented by simple and rational habits of living, a balanced diet and personal hygiene. The concept of “primary and secondary prevention action” is the first and major thrust in cancer control. The first and most effective cancer control measure will be the exit of tobacco use in any form from the face of the earth. It will be as great a boon to humanity as elimination of nuclear weapon. Yet tobacco is branded a “cash crop” and tobacco industry is promoted and incentives given by governments. Many of the risk factors like food habits personal hygiene, environmental hygiene can be effectively practiced to reduce cancer risk. In keeping pace with advances in scientific knowledge, there have been advances in diagnostic technology to diagnose pre cancers and early cancers in the common accessible cancers like breast and uterine cervix – like mammography for breast cancers, vaginal cytology for detection of pre cancer and early cancer in the uterine cervix.

Primary prevention is cure. Prevention is better than cure.

Health screening is the obvious corollary in preventive action. It can be very useful and constitute the best insurance against certain accessible cancers, namely tobacco related cancers, uterine cervical cancer and breast cancers. Screening programmes can effectively reduce morbidity and mortality due to cancer. It can detect 3 – 4 times as many pre cancers as invasive cancer and thus prevent cancers. Screening helps in earlier detection at a stage where 100% cure is possible. With the present knowledge it is possible to cure 2/3 of all common cancers in our area. The highest priority today in cancer control is prevention. Prevention of disease depends on scientific knowledge and observance of a few simple disciplines.

An annual health check up is the best insurance against cancer.

Preventive Oncology at Cancer Institute

Department of Preventive Oncology conducts regular screening programs for cancer breast, cervix and oral cavity. More than 1000 women are screened every month in Chennai and Villupuram free of cost.

On an average 35 to 40 cases of precancers and early cancers are detected every year and treated free of cost at the Institute.

Cervical cancer screening by low cost HPV DNA testing has been introduced at the Community level for the first time in the country and is ongoing in Villupuram successfully.

Rural Mammomobile program for screening breast cancer will be launched in February 2016.

Satellite centers offering basic screening services have been established in Tirunelveli, Madurai, Dindugul and Chengelpet in collaboration with local stakeholders.
Translational Research In The Dept. of Molecular Oncology
P16 Double Elisa Kit for Cervical Cancer Screening

To overcome these challenges, the Dept. of Molecular Oncology was funded by the Department of Science and Technology to help identify and develop screening tests for the early detection of cervical dysplasia and cancers. Dr. Rajkumar and his doctoral student Mayil Vahanan developed a highly sensitive ELISA test to detect the p16 protein in the cervical smear cells. They additionally developed a companion ELISA assay for a common protein [called pan cytokeratin] which is present in all epithelial cells and cancers derived from epithelial cells such as cervical cancer. By using both these ELISA assays they have been able to distinguish normal cervical cells from abnormal cervical cells as well as the adequacy of the cervical smear cellular content.

Since the technique is ELISA based, this can be done even at the PHC level and does not require highly trained staff such as Pathologists, allowing the women to be screened and decision on the treatment taken in the out-patient set-up itself. This therefore overcomes the drawbacks associated with PAP smear, HPV Testing, Visual inspection with either Acetic acid or Lugol’s iodine. The per test cost is also likely to be very low. Thus the new test can be used for large scale population based screening for cervical cancer. A patent has been applied for the p16 assay in February 2014 with the inventors being Dr. T. Rajkumar and Mr. Mayil Vahanan Bose. [Patent Application No: 475/CHE/2014, filed on 03-02-2014].

HLL Life Care is a Government of India subsidiary which has been in the forefront of providing low cost tests for women’s health. By partnering with HLL Life Care, Cancer Institute [WIA] hopes to keep the cost per test as low as possible, so that the Government of India can help introduce this test for population based screening of women for cervical cancer and thereby help reduce the incidence and deaths due to cervical cancer.

The kit format which will now be developed by HLL Life Care will undergo independent validation in major cancer centres in the country which are involved in cervical cancer screening. Following successful validation, it is hoped that the kit will be made available for routine use.

Phase 2 Dendritic Cell Vaccine Randomized Controlled Clinical Trial In Stage Iiib Cervical Cancer

The Department of Molecular Oncology developed the country’s first dendritic cell vaccine and carried out a Phase 1 clinical trial under DBT funding. Based on the encouraging results [no toxicity and one patient with pulmonary metastasis who received the vaccine and later cisplatin chemo is disease free for more than 100 months], DST has funded the establishment of a Cancer Immunotherapy Center in the Institute. The phase 2 study has been cleared by the Ethical committee in 2013 and obtained DCGI clearance in March 2015. Since this is a 3 arm trial, with one of the arms to receive SPAG9 primed Dendritic cells, we are awaiting therapeutic grade SPAG9 from Prof. Anil Suri, National Institute of Immunology, who is our Collaborator. The production of therapeutic grade SPAG9 has been outsourced to Syngene, a Biocon subsidiary. We expect to initiate the study early next year.
Targeting Ews-fli1 In Ewing’s Sarcoma – A Targeted Therapy For Ewing’s Sarcoma

TARGETING EWS-FLI1 IN EWING’S SARCOMA – A TARGETED THERAPY FOR EWING’S SARCOMA

A hallmark of Ewing’s sarcoma is the fusion gene EWS-FLI1 (t[11:22]) seen in more than 85% of the cases. In the remaining 15% of the Ewing’s sarcoma, the EWS gene would fuse with other partners such as ERG (t[21:22]), ETV (t[7:22]), E1AF (t[17:22]) and FEV (t[2:22]). Under the DST funded program we had shown that the junctional sequence of EWS-FLI1 fusion gene could have an inhibitory effect on the EWS-FLI1 transcriptional activity and can affect the oncogenic properties of Ewing’s sarcoma cell lines expressing the EWS-FLI1 protein.

In order to move this into the clinic we then modified this junction sequence peptide with cell penetrating property and nuclear localization property. This novel peptide [CI-EWS-FLI1 PEP] has been shown to have inhibitory property in in-vitro experiments on Ewing’s sarcoma cells. A patent application for this novel peptide has been submitted this year. [Patent Application number 386/CHE/2015; dated Feb 2015]. As the peptide seems to have a short half-life. We are now formulating a nano-particle to have the peptide in its core. Monoclonal antibodies as well as Aptamers to CD99, which is expressed on the surface of Ewing’s sarcoma tumours, is being developed. These will be used on the surface of the nanoparticle for specific targeting of the tumours.

Development Of Plasma Based Diagnostic Markers For Ovarian Cancers

More than 75% of ovarian cancers are diagnosed in late stages and usually have a poor cure rate. The main problem is that the symptoms are very subtle and there are no screening tests of reliable sensitivity and specificity for these cancers. Serous adenocarcinoma of the ovary is the most common histopathological type of ovarian cancer. We had done a case control study and collected plasma from 200 healthy normal individuals and from 90 patients with serous adenocarcinoma.

Using a high end proteomics based approach [Isobaric tags followed by NanoLC-MS-MS analysis], differential expression of proteins was studied. 51 proteins were found to be upregulated while 6 were downregulated with a fold change of 2 or more. Of these antibodies for Quantibody array was available for 21 proteins and these will be validated in all the normal and serous adenocarcinoma samples. The important feature was that some of the proteins known to be elevated in serous adenocarcinomas such as CA125, VEGF, osteopontin were found differentially expressed using the proteomics approach.
Identification Of Potential Biomarkers For Early Diagnosis And Follow-up Of Breast Cancers

Based on our microarray study, we had identified and validated at the mRNA level more than 60 genes. Subsequently we had validated 15 proteins at the tissue level [breast tumours; paired normal and apparently normal breast tissue]. We are now conducting a case control study in breast cancer for evaluating the differential expression of the 15 proteins in the plasma from breast cancer patients, normal healthy individuals and from women with benign breast disease. Additionally, blood samples will be collected during follow-up of the treated patients and at relapse/progression to see if these markers can help in early detection of failure.

Identification Of Diagnostic And Follow-up Markers For Gastric Cancer

We had under DST funding identified and validated our microarray data at the protein level in the gastric tissues. A pilot study was conducted using plasma from patients with gastric cancer, plasma from patients with benign gastric pathology and healthy normal individuals. The study confirmed 8 out of the 15 markers to be differentially expressed in gastric cancer. We are now validating this in a case control study with 200 gastric cancer samples and 400 healthy normal individuals.

Hereditary Cancers

The hereditary cancer clinic started functioning from 2002 and has more than 1200 families registered. Mutation analysis for known genes associated with different hereditary cancers has been done since 2002. Initially we had used PCR-d-HPLC followed by sequencing till 2011. Subsequently we had started using Next Generation Sequencing technology and currently are studying 57 genes.

Ours is the only Institute in the country to offer this service free of cost to all eligible patients.

Cell-free DNA [CFDNA] In Breast Cancer

The evolving high end technologies can now help detect tumour derived mutations in genes associated with different cancers including breast cancer. This technology can now be used to study the circulating cell free DNA which will include tumour derived DNA as well.

Using our Ion Torrent PGM unit we have standardized the protocol and have started analysis of cfDNA in breast cancer patients. Our findings suggest that the yield is higher in metastatic disease than early disease.