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11th World Hematology and Oncology Congress
&
47th World Congress on Nursing Care

July 24-25, 2019 | Rome, Italy

Scientific Tracks & Abstracts

30 YEARS OF EXCELLENCE IN MEDICAL PUBLISHING

Sessions

Medical and Clinical Oncology | Blood Disorders | Hematology | Hematologic Oncology and Blood Cancers | Hematology & Oncology: Case Reports | Nursing Practice | Pediatric Nursing | Women health Nursing

Session Chair
Dawn Leslie
Healthy-Wellthy-Wise Children's Books, Canada

Session Introduction

Title: **Anlotinib is effective in the treatment of advanced carcinoma ex pleomorphic adenoma of the submandibular gland**
Dengjun Sun, Yantai Yuhuangding Hospital of Qingdao University, China

Title: **Digital transformation: Blood transfusion procedure**
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Title: **Myelodysplastic disorder as the main performance of peritoneal primary sclerosing epithelioid fibrosarcoma on 18F-FDG PET/CT**
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Title: **Cytogenetic profile of Philadelphia chromosome positive chronic myeloid leukemia**
Nazia Hafeez, Liaquat University of Medical & Heath Sciences, Pakistan

Title: **Nursing is life**
Maryam Salah Alhulaybi, King Abdulaziz National Guard Hospital, KSA

Anlotinib is effective in the treatment of advanced carcinoma ex pleomorphic adenoma of the submandibular gland

Shujie Song, Ping Sui, Dengjun Sun
Yantai Yuhuangding Hospital of Qingdao University, China

Background: Carcinoma ex pleomorphic adenoma (CXPA), a very rare malignancy found mostly in the major salivary glands, has no established standardized treatment.

Case presentation: This report describes a 67-year-old male with advanced CXPA who was effectively treated by anlotinib. Pleomorphic adenoma of the submandibular gland was first diagnosed in 1976 after a surgical resection of a mass underneath the jaw. The patient underwent re-excision 3 years later due to a recurrent pleomorphic adenoma. CXPA was first diagnosed in 2016 after a surgical removal of the left submandibular mass. A lung nodule was found on a chest CT scan in January 2018. Following a CT-guided lung biopsy that demonstrated findings consistent with pulmonary metastasis, the patient underwent local therapy (microwave ablation and radioactive seed implantation) but suffered a recurrence of disease approximately 6 months later. Anlotinib was administered orally at a dose of 12 mg daily on a 2 weeks on/1 week off schedule. A tumor assessment was performed every 2 cycles. A partial response was observed after two cycles of treatment. The disease remains in continued partial response after completion of his 10th cycle.

Conclusion: This is the first report for anlotinib in treating CXPA. Further pre-clinical and clinical studies are needed to validate the efficacy and safety of anlotinib in the treatment of CXPA.

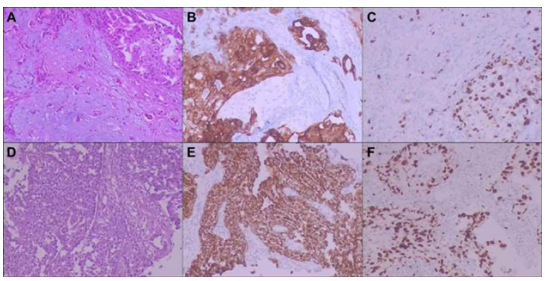

Figure 1 ***(A)*** *Histology of primary carcinoma ex pleomorphic adenoma;* ***(B)*** *Immunohistochemistry showed that tumor cells were positive for CK8/18.* ***(C)*** *Immunohistochemistry showed that Ki 67 was 30–40%.* ***(D)*** *Histology of pulmonary metastasis.* ***(E)*** *Immunohistochemistry showed that tumor cells were positive for CK8/18.* ***(F)*** *Immunohistochemistry showed that Ki 67 was about 70%. (**A–F**) Original magnification, ×100,(**A–C**: primary carcinoma ex pleomorphic adenoma of the submandibular gland, **D–F**: pulmonary metastasis, **A** and **D**: hematoxylin-eosin).*

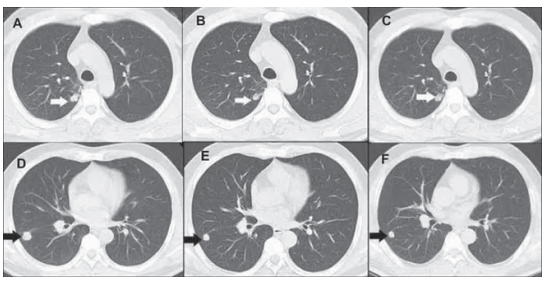

Figure 2 *Chest CT scans before and after anlotinib treatment. (**A** and **D**): Before anlotinib treatment, two measurable tumor lesions were shown. (**B** and **E**) After two cycles of anlotinib treatment, a Partial response was observed. (**C** and **F**) After six cycles of anlotinib treatment, a continued partial response was observed. The white and black arrowheads aim at two measurable tumor lesions, respectively. Response assessment was based on RECIST guideline version 1.1*

Biography

Dengjun Sun is a professional oncologist and has his expertise in the diagnosis and treatment of malignant tumors. He owns normative treatment philosophy and has rich clinical experience in the interventional and targeted therapy of liver cancer, lung cancer, breast cancer and other solid tumors. He is one of the members of the World Society of Interventional Oncology (SIO) and an important member of Interventional and Minimally Invasive therapy Committee of Chinese Medical Education Association. With extensive research and rich clinical experience in cancer therapy, he has helped many advanced cancer patients in China.

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Digital transformation: Blood transfusion procedure

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Blood and blood products transfusion is a common procedure in modern medicine yet is potentially one of the most hazardous therapeutic measures in hospitals. Evidence stated that in the last 20 years, adverse outcomes following blood transfusion have been increasing due to increased patient and healthcare complexity.

In 2016, King Abdul-Aziz Medical City for National Guards in Riyadh, which is one of the largest modern and state of the art hospital with 1200 bed capacity, experienced a major blood transfusion error where a patient received a blood of another patient. Fortunately, it was of the same blood group. Although there was no harm to the patient, the organization decided to implement a more strict, robust and vigilant automated system to ensure patient safety and reduce the risk of human errors.

To implement this system and maintain high standards of practice focusing on quality and patient safety, the hospital implemented a close loop transfusion workflow. This system is a fully automated system that starts from the physician order till administration and documentation. The workflow consisted of 6.

Steps:

1. Automated physician order
2. Automated sampling process
3. Automated product preparation and issuing
4. Automated patient verification and order validation
5. Automated administration process
6. Automated documentation process

To support this workflow, the hospital introduced a bar-code system to help nurses and health care providers reduce error throughout this process, thus ensuring patient safety. The system includes bar-coded wristbands, bar-coded labels for blood tubes and bags, and bedside scanners. In addition, all systems including lab system, infusion pumps and computers were all integrated. These systems integration was the key to our success in decreasing the risk of wrong blood to wrong patient. All stakeholders of this projects including blood bank/lab, health information technology, quality department, and nursing services worked collaboratively to ensure the success of this project. Recently the compliance to this process is 99% with zero error since the implementation of this process.

Biography

Nabiha Tashkandi is the Associate Executive Director Nursing Services at King Abdul-Aziz Medical City, Ministry of National Guard, Riyadh since October 2016. She received her BSN from King Abdul Aziz University in Jeddah in 1993 and her Master of Science in Nursing in 2004 from the University of British Columbia, School of Nursing in Vancouver, B.C. Canada. She joined King Abdul-Aziz Medical City in 1997 and has more than twenty-five years of clinical experience in nursing and healthcare system as she advanced from staff nurse to supervisor to Director of Clinical Nursing prior to the current position she holds. She successfully launched a Nursing Strategic Plan with Vision 2020 in February 2017. In May 2017, she was appointed as President of Nursing Professional Council at the Saudi Commission for Health Specialties.

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Real world study of anlotinib in advanced lung cancer

Shujie Song, Ping Sui, Dengjun Sun
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Background and Purpose: Anlotinib is an oral receptor tyrosine kinase (RTK) inhibitor and targets multiple RTKs including VEGFR, EGFR, PDGFR and FGFR. Anlotinib was approved in China for the treatment of patients with lung cancer, squamous cell carcinoma of esophagus and soft tissue sarcoma. This study evaluated clinical outcomes and safety of anlotinib in real world practice.

Method: Medical records of 15 patients from our hospital with advanced lung cancer who received anlotinib between July 2018 and February 2019 were retrospectively reviewed. Anlotinib was administered orally at a dose of 12 mg daily on a 2 weeks on/1 week off schedule (21-day cycle) until disease progression or unacceptable toxicity.

Results: Twelve patients were male and the age at diagnosis ranged from 49 to 79. Nine patients were adenocarcinoma, 3 were squamous carcinoma and 3 were small cell lung cancer. Three patients were previously treated with tyrosine kinase inhibitor and 4 with anti-angiogenesis therapy. Two patients received anlotinib as the first line setting, 6 as the second line setting, 3 as the third line setting, 3 as the fourth line setting and 1 as the fifth setting. After 2 cycles of treatment, 5, 3 and 7 patients had achieved partial response, stable disease, and progressive disease, respectively. The objective response rate was 33.3%. The disease control rate was 53.3%. After 4 cycles of treatment, 3, 2 and 10 patients had achieved partial response, stable disease, and progressive disease, respectively. The objective response rate was 20%. The disease control rate was 33.3%. After 6 cycles of treatment, 3 and 12 patients had achieved partial response and progressive disease, respectively. The objective response rate was 20%. The disease control rate was 20.0%. No severe toxicity was observed in all patients.

Conclusion: Real world anlotinib outcomes mirror clinical results in advanced lung cancer.

Biography

Shujie Song is a practicing medical oncologist at the Affiliated Yantai Yuhuangding Hospital of Qingdao University, China. He is experienced in diagnosing and treating cancers. He is also a young medical scientist. He has worked as a postdoc fellow for three and half years at the Lineberger Cancer Center at the University of North Carolina at Chapel Hill, USA. His research focuses on lung cancer and novel therapeutics. He is also interested in studying the role of aberrant chromatin remodeling in cancer development. He is currently the principal investigator for a grant dissecting the role of NRF2 activation in the development of lung cancer.

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Nurse: A voice to lead

Leonora Rodillo Sacbibit
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Introduction: King Abdulaziz Hospital in Al Ahsa is a 245 bed-capacity Acute Care Facility in the Eastern province of Saudi Arabia. It was founded in 2002 providing National Guard personnel and their eligible dependents.

The Nursing Department launched Tissue Viability Nursing in 2011. At that time, the existing Hospital- Acquired Pressure Injury (HAPI) problems identified. Resulting, HAPI prevention was adopted as a key nursing indicator in that same year and prevention campaign was developed. Through successful collaboration of all healthcare workers, patients and families, with the tissue viability nurses on the lead, the HAPI prevention has led to more robust and sustainable results in reducing hospital-acquired pressure injuries.

Objectives:

1. Achieve zero tolerance in HAPI throughout the years.
2. Create a culture of safety by engaging all healthcare providers in preventing pressure injuries.

Methods:

Using the PDCA (plan–do–check–act) model, primary interventions were put in place:

1. Strengthened communication
2. Adopted SSKIN bundle
3. Effective and early assessment
4. Patient and family education
5. Empowerment of involved healthcare providers
6. Involvement of support services
7. Judicious monitoring
8. Higher management support

Additionally, the ADKAR model of change was applied to implement changes and sustain results.

Results: The frequency of hospital-acquired pressure injuries showed an over-all downward trend from May 2012 up to present. The HAPI has been reduced from a rate of 3.13 to 0.23. Significant improvement of HAPI in Critical Care Units has been reduced from 9.58 to 1.35 as per 1,000 patent days.

Conclusion: A vigorous culture of safety and collaboration is a part and parcel a major role in the success of HAPI prevention. Though strong collaboration between members of the multidisciplinary team present a major component in the prevention of HAPIs, a strong lead to congregate then team demands for the unity of action.

Biography

Leonora Sacbibit is a wound care nurse specialist. Currently she is working at King Abdulaziz National Guard Hospital, KSA.

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The link between breast cancer and hypercoagulability

Janette Bester, Julien Nunes Concalves
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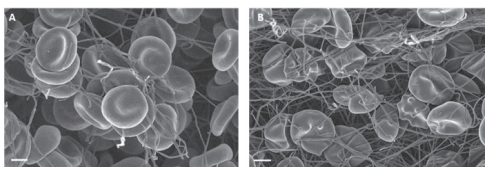
Statement of the Problem: Breast cancer patients are at an increased risk for thrombotic events such as deep vein thrombosis (DVT) and venous thromboembolism (VTE), drastically affecting survival and quality of life post-treatment for these patients. It has been proposed that this increased risk is caused by cancer associated inflammation-induced hypercoagulation, a key factor involved in thrombus formation.



Scanning electron images of whole blood. A: Healthy control group images showing normal red blood cells B: Breast cancer group images showing abnormal deformed red blood cells. Scale: 1µm

Methodology & Theoretical Orientation: This study utilized microscopy and rheological techniques to examine coagulation components during clot formation, in order to obtain a better understanding of how changes to these components may increase thrombus formation and thus the risk of thrombotic events. Whole blood from treatment-naïve breast cancer patients were compared to whole blood from healthy controls. Routine clinical tests were used to obtain an overall clinical picture of each participant. Scanning electron microscopy was used to study the fine ultrastructure of the red blood cells and platelets. Thromboelastography (TEG) was used to study the changes in clot dynamics during coagulation.

Findings: SEM showed platelets to be activated as well as a presence of spontaneous fibrin fibre formation. Also, red blood cells from the patient group showed more irregular surface membranes, increased agglutination and eryptosis when compared to healthy controls. Results from the TEG showed that clots form faster in breast cancer patients, with increased strength and rigidity, thus revealing the hypercoagulable nature of whole blood in this patient group. The results in this study have revealed the marked differences in coagulation and associated blood components between healthy controls and treatment-naïve breast cancer patients.

Conclusion & Significance: They provide a greater understanding of clot formation dynamics and has shown that even in a small sample size, breast cancer patients are at an increased risk of thrombotic events, traceable through rheological techniques. This justifies further investigation into the utilization of these techniques in a clinical, point-of-care setting, in order to increase the chance of survival and quality of life for these patient's post-treatment.

Biography

Janette Bester has been establishing her research group as well as her research focus since 2015. Her research focusses mainly on vascular complications, specifically hemorheology in chronic inflammatory diseases such as Type 2 Diabetes, breast cancer and prostate cancer patients. She uses novel techniques that distinguishes her from most of the research in her field. Her goal with her research is to improve tissue perfusion to improve wound healing as well as quality of life in patients with vascular complications as well as to determine the thrombotic risk in a specific patient population.

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Myelodysplastic disorder as the main performance of peritoneal primary sclerosing epithelioid fibrosarcoma on 18F-FDG PET/CT

Ping Sui, Shujie Song, Dengjun Sun
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Background: Sclerosing epithelioid fibrosarcoma (SEF) is a rare soft tissue tumour. Primary SEF in peritoneal is exceedingly rare and has not be reported before.

Case presentation: A 67-year-old male patient was presented with progressive elevated white blood cells for 1 week in his routine physical examination. Abdominal CT examination revealed peritoneal multiple space-occupying lesions. Images of 18F-FDG PET/CT showed elevated 18F-FDG uptake in the peritoneal multiple mass. In addition, his cervical, thoracic and lumbar vertebra presented with wide range of high metabolism signs, but no bond damage manifestation. Histopathological examination of the peritoneal lesion and bone marrow cytology and morphology confirmed the diagnosis of peritoneal primary sclerosing epithelioid fibrosarcoma accompanied with leukemoid reaction.

Conclusion: Here we describe a rare case of SEF arising from peritoneal, an unusual origin and location for such a relatively rare lesion. Besides, the atypical clinical manifestations and the typical imaging of this patient will provide guiding significance in diagnosing this disease.

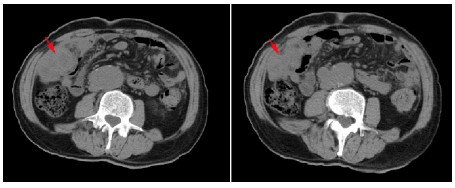

Figure 1 *A 67-year-old man was found abnormal peripheral blood leukocyte count in the Lab test, which fluctuated between 37720/μL and 78570/μL. Abdominal Pelvic CT showed peritoneum multiple occupying lesions in the parietal peritoneum, the largest of which was 6.0cm×4.0 cm(Red arrow). His physical examination was unimpressive and there are no significant findings in the Gastroscopy and Colonoscopy, and 18F-FDG PET/CT was performed for further evaluation.*

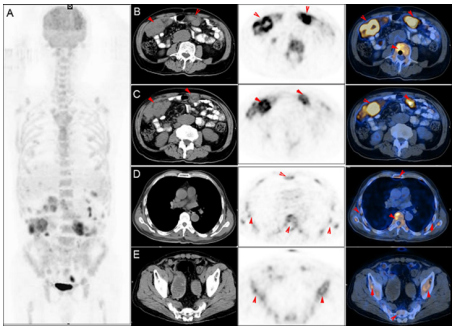

Figure 2 *Images of 18F-FDG PET/CT scan were acquired 1 hour after intravenous injection of 10 mCi of 18F-FDG with a blood glucose level of 76mg/dL(A). The images showed mutiple peritoneal mass with soft tissue density and had an elevated FDG uptake with SUVmax of 8.5(B,C). In addition, the cervical, thoracic and lumbar vertebra presented with wide range of high metabolism signs with increased FDG uptake (SUVmax, 4.8) (B,D,E),but no bone destruction presentation.*

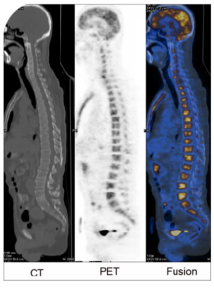

Figure 3 *18F-FDG PET/CT sagittal image showed that the cervical, thoracic and lumbar vertebra presented with wide range of high metabolism signs with increased FDG uptake, but no bone destruction presentation.*

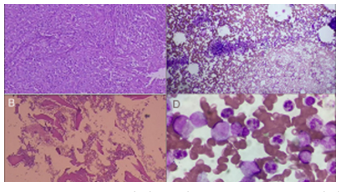

Figure 4 *Histopathological examination revealed a neoplasm composed of spindle epithelioid cells, Immunohistochemistry indicated: Vimentin(+), CK(+), SMA(-), ALK(-), Desmin(-), CD34(-), CD3(-), CD117(-), MPO(-), DOG-1(-), CD20(-), CD68(+), Ki-67 index 30%-40%.The diagnosis of this patient was peritoneal primary sclerosing epithelioid fibrosarcoma(A). Hyperplasia of bone marrow and neutrophils were shown in the bone marrow pathology(B) and bone marrow morphology test(C,D), but no abnormal cells infiltration was found. Alkaline phosphatase detection for NAP was 271 points, NAP was 100% positive. The gene test of BCR/ABL and JAK2V617 were negative. The patient was finally diagnosed as peritoneal primary sclerosing epithelioid fibrosarcoma accompanied with leukemoid reaction.*

Biography

Ping Sui received her medical postgraduate degree in a famous medical college five years ago in china and has passed the standardized training examination for resident physicians successfully. She has her expertise in comprehensive and targeted cancer therapy. Currently she is working as a professional oncologist in the Affiliated Yantai Yuhuangding Hospital of Qingdao University, Shandong, China.

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Cytogenetic profile of Philadelphia chromosome positive chronic myeloid leukemia

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Chronic myeloid leukemia; a clonal hematopoietic stem cell disorder characterized by a specific chromosomal translocation, t (9;22), results in a shortened chromosome 22; The Philadelphia (Ph) chromosome. Emergence of non-random chromosomal abnormalities in addition to the Philadelphia chromosome is a well-recognized event in CML and is referred to as clonal evolution. Detection of these cytogenetic abnormalities is imperative in stratifying patients into different prognostic groups and to offer appropriate treatment options. The study aimed to analyze various other chromosomal abnormalities in Philadelphia positive chronic myeloid leukemia patients.

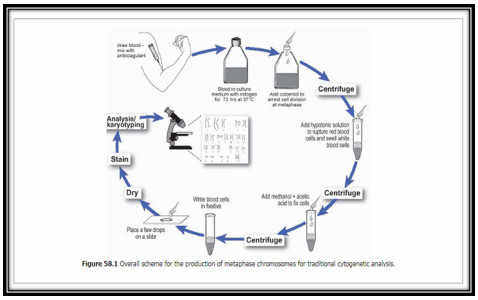

Figure S8.1 Overall scheme for the production of metaphase chromosomes for traditional cytogenetic analysis.

Patients diagnosed as CML were included and cytogenetic studies were performed with the conventional G-banding technique. A minimum of 20 metaphases were analyzed and described according to the International System for Human Cytogenetic Nomenclature (ISCN) guidelines. The diagnosis of CML was based on characteristic peripheral blood smear and bone marrow examination findings and was confirmed by presence of the Philadelphia chromosome on bone marrow cytogenetic studies. Early identification of these abnormalities may help in adapting to a more appropriate therapeutic approach. A risk stratification system based on prognostic relevance of individual ACAs may be a useful guide to prognosticate and guide treatment of CML at diagnosis and clonal evolution.

Biography

Nazia Hafeez, currently working as a Chief Resident in Hematology Postgraduate Training FCPS II in a tertiary care hospital laboratory in Hyderabad. We are looking forward to establish much more facilities as it's much limited resources in this under privileged area catering to mostly the poor communities.

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Young Researchers Forum

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The heart of the matter: A unique convergence of cardiac neoplasm, hereditary nonpolyposis colorectal cancer, and spindle cell sarcoma

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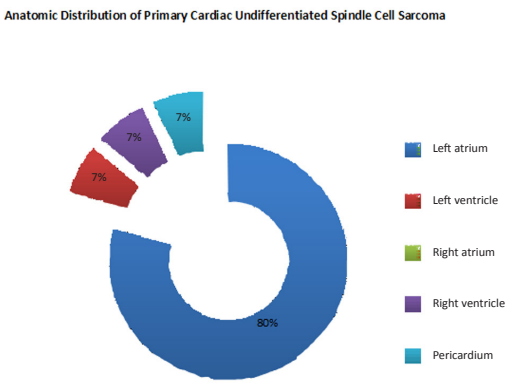

Primary cardiac tumors are exceedingly unusual and aggressive; they often develop in younger patients and present with advanced disease. The rarity and heterogeneity of primary cardiac tumors challenge the standardization of therapeutic guidelines. Undifferentiated primary cardiac spindle cell sarcomas, a distinct subset of primary cardiac sarcomas, are especially unique with fewer than 20 cases reported worldwide—the majority of which are of left atrial origin. We present a review of the etiology, pathophysiology, and therapy of undifferentiated primary cardiac spindle cell sarcomas. In conjunction, we present a unique case of a woman with hereditary nonpolyposis colorectal cancer (Lynch syndrome) who presented with a primary cardiac spindle cell sarcoma of left ventricular origin, the first case of this type and location of cardiac tumor reported in a patient with Lynch syndrome. While some malignancies are more common in patients with Lynch syndrome, sarcomas are not one of them. The absence of metastases at the time of diagnosis is atypical for left-sided cardiac sarcomas, the overwhelming majority of which have metastases at the time of diagnosis. In addition to anatomic and pathophysiologic distinctions of this case from other primary cardiac spindle cell sarcomas, it also demonstrated unique immunohistochemistry as the first reported case of MDM-negative (murine double minute homolog, a principle diagnostic marker of spindle cell sarcoma) ever reported.

Biography

Emily Bryer is a physician in Philadelphia, Pennsylvania USA. She attended the Schreyer Honors College of The Pennsylvania State University for her undergraduate training where she served as President of Global Medical Brigades and established medical clinics in areas of Ghana, Honduras, Nicaragua, and Panama with limited access to medical care and healthcare resources. She received her medical degree from The Philadelphia College of Osteopathic Medicine before starting her Internal Medicine residency at Pennsylvania Hospital of the University of Pennsylvania. Her research interests include venous thromboembolism in chemotherapy-induced anemia and gestational trophoblastic disease.

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Two novel DNMT3A mutations in acute myeloid leukemia

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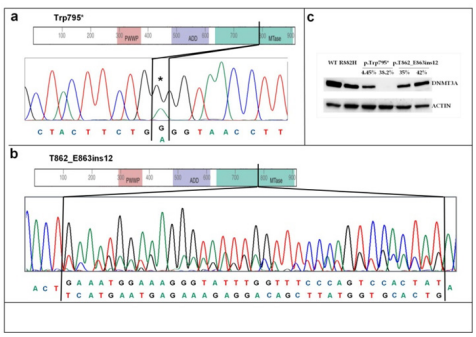
Statement of the Problem: Recurrent somatic mutations of DNMT3A occur in about 20% of acute myeloid leukemia (AML) patients, targeting a hot spot site at R882 codon [1]. DNMT3A mutations in primary AML samples are often heterozygous and are associated with CpG hypomethylation [2], which result in high myeloblast counts, and poor prognosis [3]. The study aims to characterize two new mutations in the DNMT3A gene, identified in two AML patients.



Methodology & Theoretical Orientation: DNA was extracted from mononucleated cells and it was sequenced by Sanger Sequencing and Next-Generation sequencing. Sequences obtained were mapped to human reference genome GRCh37/hg19 and annotated using Ion Reporter 5.10.2.0. The Methyl Flash Methylated DNA Quantification Kit was used to detect CpG methylation status. DNMT3A protein level was assessed by western blot.

Findings: Patient #1 had 70% of blasts in the BM at diagnosis and showed an undescribed single nucleotide variant of DNMT3A at exon 20 causing a premature STOP codon (cDNA c.2385G>A; tgG/tgA p. Trp795*; NM_022552;), coupled with IDH2 R172K mutation. The DNMT3A mutation load increased from 4% in the diagnosis sample to 38.2% in the follow-up, which had stable disease, evaluated 4 months after treatment in multicentric clinical trial. The increase of mutation rate correlated with DNA hypo-methylation and lead to loss of protein expression. Patient #2 had 80% of blasts in the BM at diagnosis and 90% at relapse, with a new insertion of 36 nucleotides in exon 22 of the DNMT3A gene (c.2924_2925ins36: TCATGAATGAGAAAGAGGACATCTTATGGTGCACT), along with FLT3-ITD. DNMT3A mutation load was 27.5% at diagnosis and increased at 48% at relapse, which occurred 7 months after completion of chemotherapy treatment. We did not observe a significant variation of protein levels, neither of DNA methylation.

Conclusion & Significance: Obtained data support the hypothesis that DNMT3A mutations may be involved in pre-leukemic clonal hematopoietic expansion.

Biography

Samantha Bruno is a PhD student in hematology in university of Bologna. She has her expertise in molecular and cellular biology. Her research is mainly focused on molecular characterization of acute myeloid leukemia primary sample and in vitro study in order to identify new drugs for personalized therapy of acute myeloid leukemia patients.

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A novel peptide drug as therapeutic for sickle cell anemia

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Sickle cell disease (SCD) is recessive autosomal inherited life threatening hemoglobinopathy which causes vaso-occlusion vasculopathy, in affected individuals. Normally the average life of RBC is 100-120 days in healthy human whereas it is as low as 4-5 days in case of sickle cell disease patients. SCD patients are immune-compromised and susceptible to infections. Reports suggest the impaired secretion of IgM and decrease in B cell receptor in B cells. Here we aim to study the effect of novel peptide drug peptide on the sickle cell anemia B lymphocyte cell line to propose a therapeutic drug for sickle cell anemia. Novel peptide drug has pleotropic effect and has important role in wound repairing, cell migration, angiogenesis, cell regeneration etc. Transformed SCA B lymphocyte and normal Daudi B lymphocyte cell lines were used for the study. Various dose of novel peptide drug concentration was used and checked for the cell proliferation using WST8 assay and cell count. With various dose of novel peptide drug CD19 quantification was done using flow- cytometry in both the cases. We also checked the IgM secretion on LPS treatment and with novel peptide drug B4 treatment in SCA B cells by ELISA. Also, levels of Antioxidant enzymes eg. SOD, glutathione and catalase were checked and compared with untreated. We identify the alteration in SCA B cell with novel peptide drug B4 treatment, CD19 expression, IgM secretion and antioxidant enzymes. Currently experiments are ongoing, and results are in compilation stage and will be completed before December. Results suggest that novel peptide drug drug seems to be promising novel drug for treatment of sickle cell anemia and help sickle B lymphocytes in multiple ways to combat against infection and protect the cells from harmful reactive oxygen species. It also acts as pathogen recognition molecule to secrete IgM in case of infection.

Results: Sickle B lymphocyte cells treated with various dose of novel peptide drug performance with respect to time determined by WST-8 show highest activity at 48hrs with 100ng/ml concentration.

Sickle B lymphocyte cells and Daudi cells treated with novel peptide drug and LPS alone or in combination for 48hrs show that novel peptide drug helps B cells activity against the LPS treatment.

Novel peptide drug treatment helps the sickle B lymphocyte cells against the oxidative stress. In case of combination of novel peptide drug with LPS, novel peptide drug shows the protective to infection. Furthermore, novel peptide drug increases the anti-oxidative property of SOD, glutathione peroxidase and catalase which is shown by gel activity assay for respective enzymes.

Surface receptors CD19 expression is reduced as determined by flow cytometry when sickle B cell exposed to LPS. However, LPS with novel peptide drug significantly increase the surface expression of CD19.

ELISA analysis of IgM secretion by sickle B lymphocyte cells show that novel peptide drug in combination with LPS secrete more IgM in order to activate the immune response of the cells thus, novel peptide drug acts as pathogen recognition molecule.

Conclusion: Results suggest that novel peptide drug seems to be promising novel drug for treatment of sickle cell anemia and help sickle B lymphocytes in multiple ways to combat against infection and protect the cells from harmful reactive oxygen species. It also acts as pathogen recognition molecule to secrete IgM in case of infection.

Biography

Rutik Thorat is a young scientist doing his high school. There are more than 250 million people living with sickle cell disease worldwide, and out of that, he is one of them.

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Prevalance of thalassemia syndromes, hemoglobinopathies and mutation analysis in a tribal school in India

Amarinder Oberoi, Swati Kanakia
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Introduction: Thalassemia and other hemoglobinopathies are the most common monogenic disorders in India with a high prevalence in tribal populations.

Aims and Objectives: To detect the prevalence of thalassemia syndromes and sickle cell anemia in a tribal school population of adolescent age group and mutation analysis of the positive cases.

Materials and Methods: This study was conducted on 211 children aged 10-14 years from a tribal school in the state Maharashtra, India. After taking clinical history, complete hemogram report was obtained by an automated cell counter. High-performance liquid chromatography (HPLC) was performed on the samples with Bio Rad D-10™ Analyser. The samples with abnormal electrophoresis patterns were subjected to next generation sequencing of HBH gene for mutation analysis.

Results: Of the 211 students sampled, 193 (91.5%) had a normal electrophoresis pattern and abnormalities were detected in 18 (8.5%) cases. β (beta) thalassemia trait was the commonest abnormality found in 16 (7.6 %) children. Heterozygous sickle cell and alpha thalassemia were found in 1 (0.5%) case each.

Of the 16 Thalassemia traits, 13 (81.25%) had IVS1-5(G>C) mutation, followed by c.47G>A (p. Trp16Ter) in 2 students (12.5%) and IVS1-1(G>T) c.92+1G>T in 1student (6.25%). The one sickle heterozygote had c.20A>T (p. Glu7Val) mutation.

Conclusion: High frequencies of these mutant alleles are maintained by the tribal populations probably due to consanguinity, lack of awareness and conveyance; low income status and high cost of treatment make them vulnerable. These groups must undergo premarital screening to decrease the risk bearing offspring with hemoglobinopathies.

Biography

Amarinder Oberoi is a pediatric resident with a keen interest in community pediatrics and genetics. After graduation he has worked in a rural hospital with bare minimum facilities for a year. Currently in final year of residency plans to pursue further studies in neurology or hematology.

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