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FROM THE EDITOR'S DESK

August 3, 2015

Sir William Osler said, "When you have made and recorded the unusual or original observation, or when you have accomplished a piece of research in laboratory or ward, do not be satisfied with a verbal communication at a medical society. Publish it."

Welcome to the first electronic medical journal of Jackson Park Hospital. This is a very integral initiative for us, as we believe this journal will allow us to follow the teachings of Sir Osler. In the past, the *Jackson Park Hospital Journal* allowed the students, residents, and physicians the opportunity to publish their research and observations, and we hope to continue that tradition with this journal, but in a form easily accessible. This journal should be used as an educational tool, which will enhance knowledge, encourage bedside learning, and escalate the field of medicine, not only for the students, but for the residents, physicians, and the staff.

This journal will focus on original content, the research performed at the hospital, by the students and faculty. Additionally, case reports will also be featured of unique cases managed by the faculty and staff. While various other content of this journal may vary, we encourage submission of research and observations by any member of Jackson Park Hospital. We hope this is an opportunity that everyone will seize to further their career in medicine. We ask that you provide us feedback and recommend future topics for study, help us to insure that we cover topics that will benefit patient care, and spread knowledge amongst those with aspirations in medicine.

Sincerely,
Editor-in-Chief(s)
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ORIGINAL CONTENT

Health Literacy: Patients' Knowledge of Diagnosis and Management Upon Discharge

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ABSTRACT

Introduction – Health literacy is a continual struggle for patients and professionals. It has been well studied nationally. We conducted a survey to assess the health literacy of our population at Jackson Park Hospital and Medical Center

Objective – Our primary objective was to assess the health literacy of our patients. We hoped that with that information in hand we would be able to empower both patients and professionals to help educate our patient population.

Methods – After prior Ethics Committee approval, we designed a survey questionnaire to assess the health literacy of patients who met the inclusion criteria and did not meet the exclusion criteria. We had five primary end points – patients' knowledge on: 1. Discharge diagnosis, 2. Details on discharge medications, 3. Dietary restrictions, 4. Follow-up appointments, 5. Cause and prevention of readmission. Patients were surveyed at the time of their discharge.

Results – The five primary end points tested were as follows: 1. Discharge Diagnosis (80%), 2. Discharge Medications (43%), 3. Diet Restrictions (50%), 4. Follow up appointments (70%), 5. Cause and preventing of readmission (73%).

Conclusion – Our patient population are aware of the reason for admission and how to prevent further hospitalization. Healthcare professionals must cater patient education to the needs of the patient. In our patients, patient knowledge was lacking on what dietary restrictions they had, what medications they had to take and the reason for taking them. Patient education, therefore, should focus those two deficits.

INTRODUCTION

Health literacy is a continual issue that all healthcare professionals and patients face. Although there is not one specific definition, the institute of medicine defines it as, “the degree to which individuals have the capacity to obtain, process, and understand basic health information and services needed to make appropriate health decisions”.¹ Ascertaining our patients' abilities to understand the information we provide can be the

difference between compliance and non-compliance, re-admission versus staying out of the hospital and most importantly their overall health.

Additionally, with fines for readmissions being handed out, there are financial incentives for institutions to make sure their patients are educated (*Figure 1*). In the FY 2012 IPPS final rule, CMS finalized the following policies with regard to the readmission measures under the Hospital Readmissions Reduction Program: Defined readmission as an admission to a subsection (d) hospital within 30 days of a discharge from the same or another subsection (d) hospital. More recently in FY 2014 IPPS final rule, CMS adopted the application of an algorithm to account for planned readmissions to the readmissions measures for AMI, HF and PN. In addition, CMS finalized the expansion of the applicable conditions for FY 2015 to include: (1) patients admitted for an acute exacerbation of chronic obstructive pulmonary disease (COPD); and (2) patients admitted for elective total hip arthroplasty (THA) and total knee arthroplasty (TKA).²

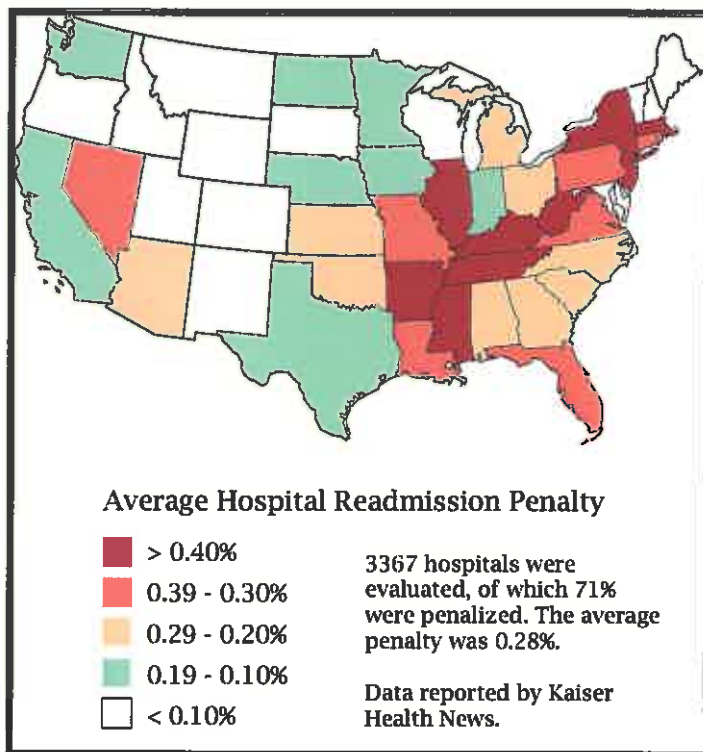


Figure 1: Readmission penalties by state³

With these two major points in mind, we conducted a small study to assess the health literacy of our patients at Jackson Park Hospital and Medical Center.

OBJECTIVE

Our goal was to increase their health literacy and empower them to play an essential role in their care, both of which would ultimately lead to decreased morbidity and mortality. In addition, we hoped that this study would lead to better coordination of care amongst all

involved disciplines. Lastly, and perhaps most importantly, we hoped that readmission rates and overall healthcare expenditure would be decreased. (Figure 2)

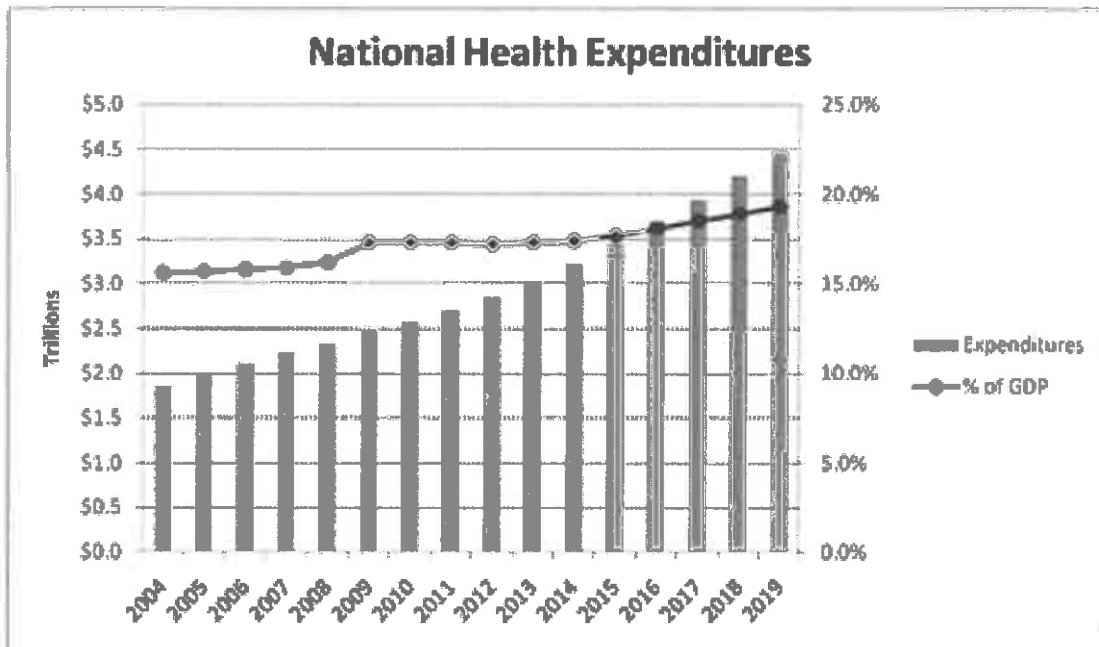


Figure 2: Projected National Health Expenditures⁴

METHODS

A questionnaire was designed with the intention to test the health literacy of the patient (Figure 3). Prior Ethics Committee approval was obtained. During the month of April 2015, thirty-two patients discharged from Jackson Park Hospital and Medical Center were interviewed after signing an informed consent form (Figure 4). Patients were included if they were (inclusion criteria): 1. Oriented to person, place and time; 2. Aware of the circumstances leading to their admission. They were excluded if (exclusion criteria): 1. Baseline dementia/disorientation; 2. Those signing out against medical advice; 3. Those unwilling to participate in the study. The final study group was 30 patients, as two were unwilling to participate. 57% (17/30) were female, while 43% (13/30) were male (Figure 5). 13% (4/30) were between 18-39 years of age, 57% (17/30) were between 40-64 years of age and the remaining 30% (9/30) were 65 years or older (Figure 6). There were five primary end points which were tested: 1. Diagnosis at discharge; 2. Medications to take upon discharge and their purpose along with a few major side effects; 3. Any dietary restrictions they had; 4. If they had any follow-ups and why they needed to follow up; and lastly 5. Under what circumstances they had been admitted and what steps to take in order to avoid readmission.

Patient MRN:
 Visit ID:
 Date:

DOA:

DOD:

Questions:

NO

YES

Do you know the condition you were treated for?

Knows name of disease or in layman's term

Do you know the medical conditions you have?

Do you know what medications you are suppose to be taking for this condition?

What is the purpose of these medications?

Do you know the Dosage of your medications and how many times in a day you are suppose to be taking it?

How long do you have to take these medicines?

Do you know any side effects of your medications?

Do you know of any dietary restrictions you have to follow (if Applicable)

Do you know the name of your doctor and when is your follow up appointment with the doctor?

Do you know the purpose of follow up visit?

Do you know what caused you to be sick?

How will you prevent yourself from being admitted again?

Figure 3: Discharge questionnaire

Consent Form for Participation in a Questionnaire Study
Patient's understanding of their treatment plans and diagnosis at discharge

Description of the research and your participation

Will you be willing to participate in a questionnaire research study conducted by Jackson park residents? The purpose of this study is to evaluate patient's understanding of their treatment plans and diagnosis at discharge

Your participation will involve to answer the questions regarding the reason for your admission, your treatment plans, follow-up and plan to prevent your readmission to the hospital

Risks and discomforts

There are no known risks associated with this research including no risk of physical or emotional distress and your information will be confidential, it will not include your name age, sex or demographics and it is only one time study with questions asked solely for the purpose of study.

Potential benefits

This study will help us improving patient quality care and also will help us to guide you through the treatment plan

Voluntary participation

Your participation in this research study is voluntary. You may choose not to participate and you may withdraw your consent to participate at any time. You will not be penalized in any way should you decide not to participate or to withdraw from this study.

Questions

Do you have any questions or concerns about this study?

Consent

I have read this consent form and have been given the opportunity to ask questions. I give my consent to participate in this study.

Participant's signature _____ Date: _____

Contact number (Optional): _____ MRN#: _____

Witness: _____

Figure 4: Consent Form

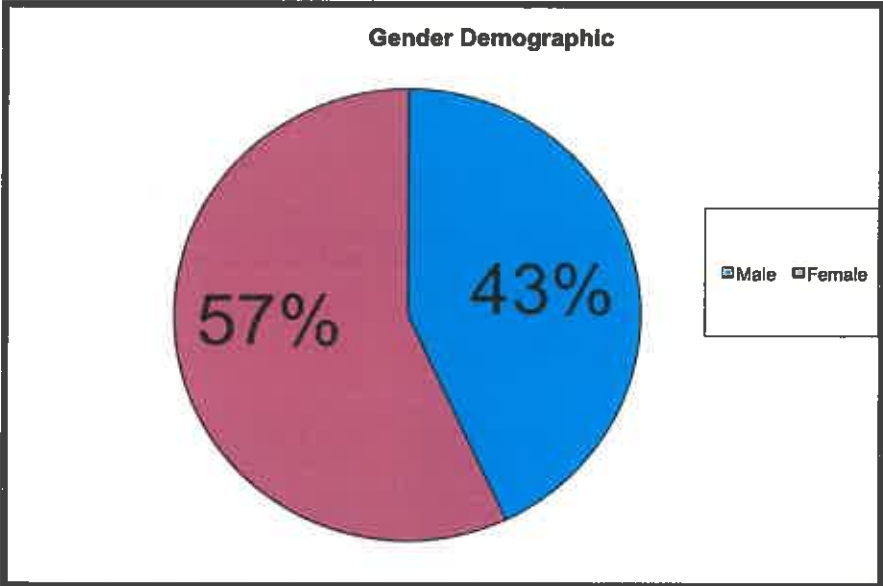


Figure 5: Sex Demographics

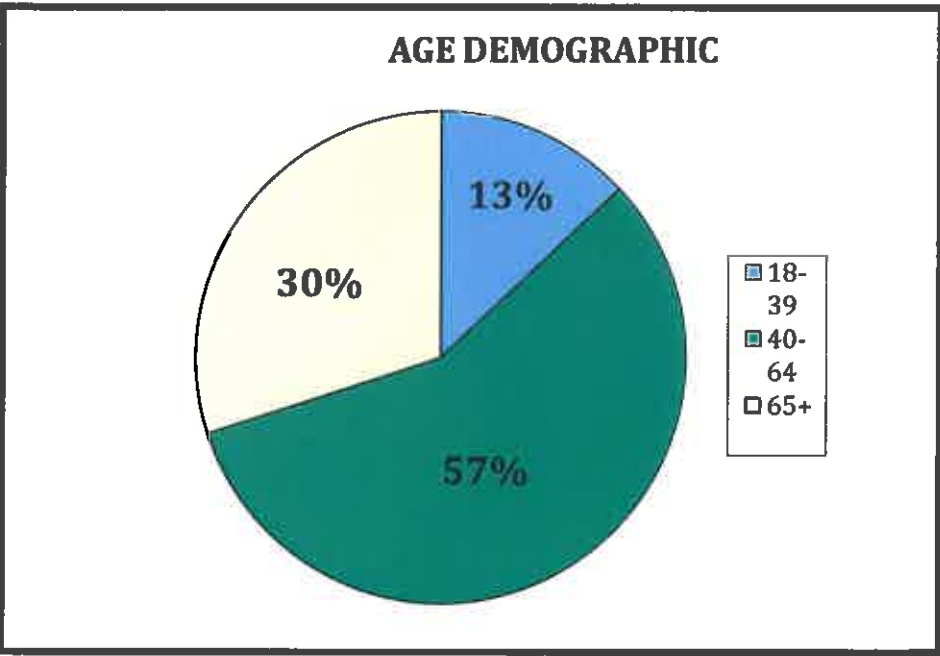


Figure 6: Age Demographic

RESULTS

With respect to the five primary end points the results were as follows 24/30 (80%) of the patients knew their diagnosis at the time of discharge. 13/30 (43%) patients knew their discharge medications, including the purpose for which they were taking them and a few common side effects. (Additionally, there were 6 patients who were able to state both, the name of their medications as well as the dosing and frequency). 15/30 (50%) patients were aware of their dietary restrictions. 21/30 (70%) patients knew their follow-up appointments and the purpose of the follow up. 22/30 (73%) of the patients knew the circumstances under which they had become ill and required hospitalization and consequently knew the steps they had to take in order to avoid readmission (*Figure 7*).

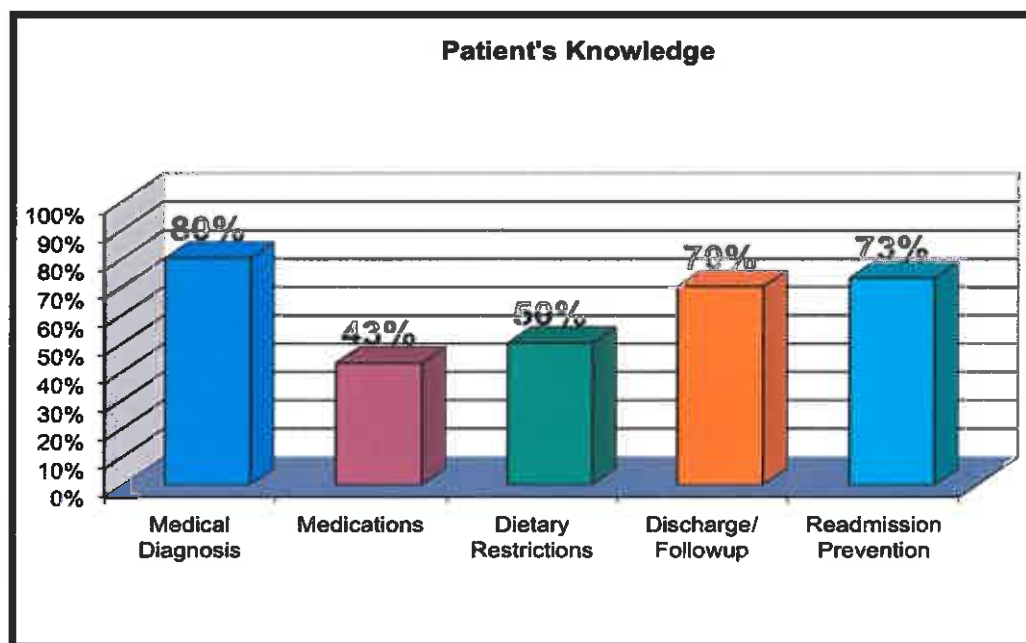


Figure 7: Patient's knowledge – Primary Endpoints

CONCLUSION

Our results were rather predictable. The results show that the overwhelming majority of patients admitted knew the diagnosis under which they were admitted to the hospital, the follow up appointments which were required and lastly the circumstances which caused them to be admitted (eighty, seventy and seventy-three percent respectively). However, as demonstrated, there were two important factors the majority of patients did not know: the medications they were required to take and their dietary restriction. With a large portion of our patients having chronic medical conditions (CHF, CKD, Diabetes, HTN, and COPD) and their admission being related to those conditions (*Figure 8*), any and all education we provide is crucial. We deem that patient education on their diet and medication should be stressed upon release from the hospital.

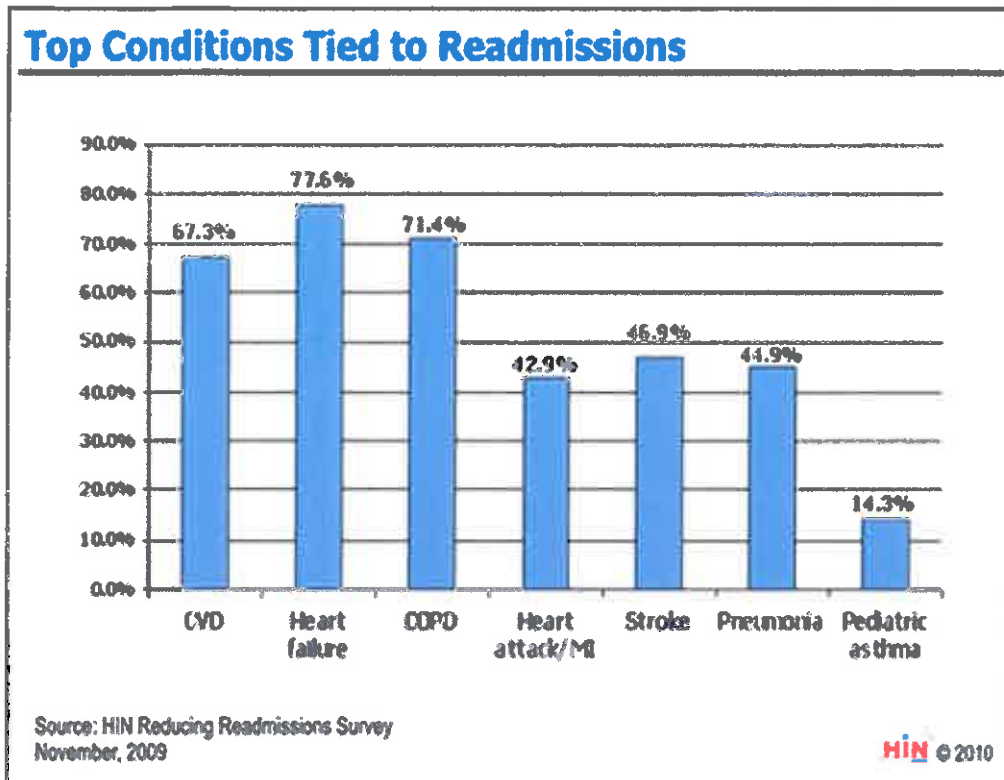


Figure 8: Top Readmission Conditions⁵

DISCUSSION

As stated earlier, a large number of patients admitted to Jackson Park Hospital, are admitted with exacerbations of chronic medical conditions. As primary care physicians, the responsibility of educating patients on diet and life style modifications along with adherence to medication regime falls on us. As we demonstrated in our study, the majority of our patients knew and understood their discharge diagnosis and their follow-ups. What was lacking in our education of patients, was teaching them the importance of an appropriate diet and compliance with medications. It is our belief that with correct education, patients can be taught the importance of these two major factors. Physicians, and particularly those caring for patients in the hospital settings, operate under the assumption that patients who have chronic medical conditions already know about their conditions, particularly the dietary restrictions and importance of medication compliance. This, we have shown, not to be true. Patients are, in fact, lacking in these two important aspects. Hence, we believe a heavy emphasis should be placed on these two with regards to patient education.

The major limitations to our study were small sample size and limited time frame. Secondly, the majority of our patients shared a similar demographic, from the south side of Chicago and a low socioeconomic status. Additionally, we did not stratify our patients based upon their diagnosis, meaning, we did not separate those who were admitted for exacerbations chronic conditions vs. those who were admitted for acute conditions.

We plan on conducting a second study, with a few major changes. We intend to include a larger sample size for a longer time frame, stratify patients based on chronic vs acute conditions, and implement a multidisciplinary patient education protocol on the major chronic conditions (with eventual inclusion of such protocol into electronic medical records).

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CASE REPORT

Basal Ganglia Infarct Confirms Carbon Monoxide Poisoning

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TO THE EDITOR: A 42-year-old male presented to the ER after he was found unresponsive by a witness. History was limited as patient was intubated, but patient's fiancée reported that the patient was released from the prison and had gone out to celebrate. On admission, the temperature was 99.3° F with blood pressure of 111/50, heart rate of 115 bpm, a respiratory rate of 20 breaths per minute and oxygen saturation of 96% on 100% ventilator. Patient was normocephalic, atraumatic with pupils constricted bilaterally with minimal reaction, but corneal reflex were present. He was tachycardiac with muffled heart sounds and lungs with coarse breath sounds in all fields. On neurologic examination, tone was symmetric and reflexes of 1+ was noted in all extremities with Babinski equivocal bilaterally. The remaining physical examination was benign.

Laboratory results showed leukocytosis, glucose of 54 mg/dL, sodium of 148 mEq/L, high potassium at 6.0 mEq/L, and hypocapnia at 19.8 mEq/L. Creatinine was 3.1 mg/dL. Drug screen was positive for opiates and alcohol level was 58 mg/dL. Troponin was 0.74 ng/mL and D-dimer was 0.68 mg/L FEU. Arterial blood gas showed pH of 7.147, pO₂ of 131.0 mmHg, bicarbonate of 13.7 mMol/L, and alveolar-arterial oxygen pressure difference of 533.8 mmHg. No carboxyhemoglobinemia noted. Head CT scan showed hypodensities in the basal ganglia bilaterally (**Figure 1**) with differentials of carbon monoxide poisoning, metabolic disease or hypoxic ischemic event. Repeat CT of the head remained unchanged. Five days later, ABG showed carboxyhemoglobinemia of 1.1%, confirming diagnosis of carbon monoxide poisoning.



Figure 1: Head CT with hypodensities in globus pallidus (red arrow)

Carbon monoxide (CO) is a colorless, odorless, tasteless gas produced by hydrocarbon combustion.² CO poisoning is considered a leading cause of poisoning deaths in the United States.¹ With high affinity for oxygen, CO can diffuse through membranes and bind to the iron moiety of heme to form carboxyhemoglobin.¹ This causes impairment in the delivery of oxygen to the tissue, leading to ischemia and infarction.¹ The etiology for carbon monoxide poisoning is the exposure, which includes, but not limited to smoke inhalation, automobile exhaust, and faulty heaters.² While the symptoms can be subtle and nonspecific, it is vital that carboxyhemoglobinemia should be evident for diagnosis per ABG. On rare cases, there has been evidence of bilateral lesions in globus pallidus from CO poisoning.^{1,2} Along with other areas in the brain, the most vulnerable to hypoxia is the globus pallidus, as this region lies in a “watershed” area of the brain between two large vascular supplies.³ This phenomenon explains why CT may show globus pallidus lesions in CO poisoning.³ Primary treatment includes administration of 100% oxygen after removing the etiology. Additional supportive care can be provided based on severity of the toxicity.

The patient remained on ventilator support with 100% oxygen and fluids and antibiotics initiated for aspiration pneumonia. Poison control was notified, who instructed serial labs. Upon improvement, patient was transferred to a rehab center.

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CASE REPORT

Unusual Organisms in the Bone Marrow causing Pancytopenia in HIV individuals

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Cryptococcus neoformans is an encapsulated yeast and can cause a diverse variety of host responses based on the host's immune status¹. The most serious infections are seen in immunocompromised individuals including those with HIV. Although it is not an uncommon infection in HIV individuals, the presence of this opportunistic yeast in the bone marrow is very rare². The usual presentation includes pulmonary, CNS and skin cryptococcosis¹ and patients can develop symptoms such as cough, pneumonia, headache, meningitis, papules, cellulitis, etc. The growth of this yeast in the bone marrow is shown to cause Pancytopenia^{3,4} and when HIV is added to the scenario, the deterioration of the patient's health status is much more rapid.

A CASE REPORT:

A 54 year old African American woman with a past medical history of HIV and asthma complained of shortness of breath, non productive cough, chills and urticaria on her neck and chest upon admission. She denied any fever or night sweats and denied any recent travel or sick contacts.

Blood Pressure	96/64 mmHg
Pulse	103 beats/min
Respiratory Rate	22 breaths/min
Temperature	98.3 °C
Oxygen Saturation	95%

Her absolute CD4 count and viral load were 20 and 20457 respectively. Her initial CBC showed WBC $1.19 \times 10^3/\mu\text{L}$, HGB 9.1 g/dL and PLT $242 \times 10^3/\mu\text{L}$ so she was given Neupogen. Despite treatment, she showed progressively decreasing levels of WBC, HGB and PLT on follow up laboratory findings so a bone marrow biopsy was done. The pathology results showed myelodysplastic features and the presence of yeast like organisms with thick capsules (see **Image 1**).

Meanwhile, she also developed severe headache and neck pain. A lumbar puncture showed elevated protein levels of 95 mg/dL and a decreased glucose level of 36 mg/dL. The India ink stain and culture revealed encapsulated yeast so she was diagnosed with cryptococcal meningitis and started on Amphotericin B. Patient's neurological and bone marrow status improved and she was discharged in stable condition. This patient not only presented with the classical symptoms of HIV/AIDS but also the atypical bone marrow infection causing pancytopenia in synergy with HIV.

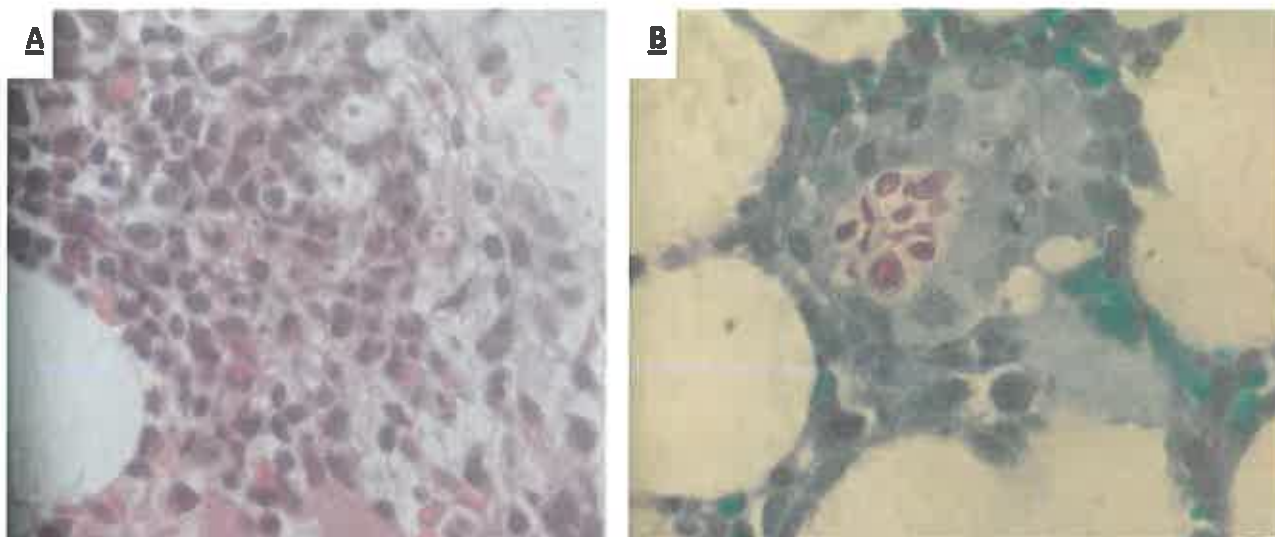


Image 1: Patient's bone marrow biopsy illustrating the presence of encapsulated yeast using (A) H & E stain under low magnification and (B) PAS stain under high

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CASE REPORT

Central Catheter Induced Infective Endocarditis

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ABSTRACT: Central venous catheter induced endocarditis is a healthcare-associated infective endocarditis that is increasing in incidence and therefore should be added in categorization of infective endocarditis. We report the case of a 61 year old female who developed vegetation and endocarditis due to a hemodialysis catheter in her right subclavian vein.

INTRODUCTION: Infective endocarditis (IE) is a relatively rare disease in the United States but has been increasing in incidence from 2000 to 2011 (from 11 to 15 per 100,000 people).¹ Infective endocarditis is seen in the setting of native valves, prosthetic valves, intravenous drug users, nosocomial IE, and health-care associated IE. This last category is new and should be included because of its increasing incidence, especially for chronic hemodialysis patients. The incidence of IE in hemodialysis patients is estimated to be 308 per 100,000 patient-years.¹ Here we report the case of a 61 year old female with end stage renal disease who developed vegetation and endocarditis due to a hemodialysis catheter in the right subclavian vein.

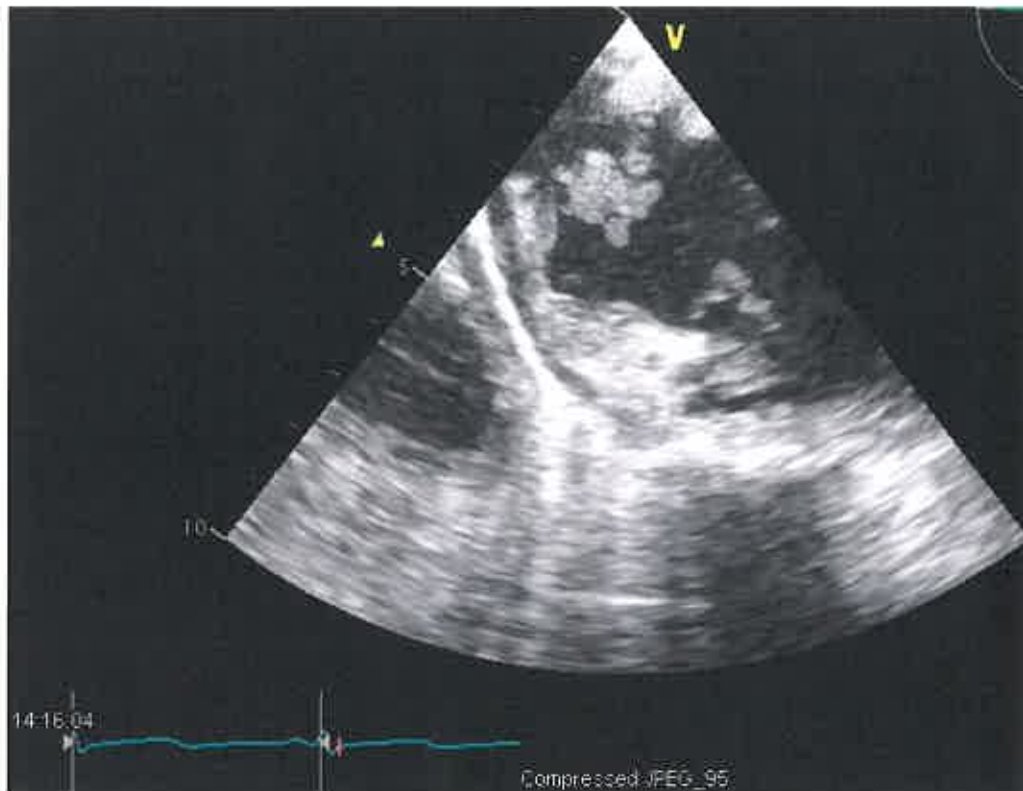
A CASE REPORT:

A 61 year old female with hypertension and end stage renal disease on hemodialysis presented to the emergency department in respiratory distress, complaining of shortness of breath. She was placed on bilevel positive airway pressure (BiPAP) and became clinically stable with 100% oxygen saturation. Regarding her social history, she denied use of tobacco, alcohol, and any illicit drugs. She had a subclavian catheter placed in May 2015.

On physical examination, the patient appeared acutely ill and was dyspneic. Her initial blood pressure was 168/104 and temperature was 97°F. Her oral mucosa membranes were dry. Heart sounds were regular without murmurs, rubs, or gallops. There was wheezing over the upper lung fields bilaterally, crackles over the left lower lung field, and decreased breath sounds over the right lower lung field. No signs of infection were seen at the catheter insertion site. There was mild tenderness of the upper quadrants of her abdomen bilaterally and her extremities exhibited no edema.

The investigations revealed WBC 7.17, BUN 25, Creatinine 7.6, ALP 409, BNP >5000, and glucose 109. Cardiac enzymes were normal. Chest radiograph revealed right lower lobe consolidation with evidence of pulmonary edema. ABG revealed mixed respiratory and metabolic acidosis with pH 7.169, PCO₂ 58.4, HCO₃ 20.4. Blood cultures were negative. The patient was given vancomycin and cefepime in the ICU and started on azithromycin and

ceftriaxone the following day. Transthoracic echocardiography showed large vegetation in the right atrium confirmed by transesophageal echocardiography.



DISCUSSION: Catheter-related bacteremia in dialysis patients may result in metastatic infectious complications, including osteomyelitis, endocarditis, septic arthritis, or epidural abscess. These complications occurred in approximately 5 to 10 percent of patients on hemodialysis by catheter. There has been a significant increase in the proportion of patients without previously known valve disease that have developed IE as the result of more frequent venous catheterization, especially with hemodialysis.

As the duration of use of central venous catheters increases, so does the risk of infection. The most frequent organisms seen are *Candida*, *Pseudomonas*, *Enterococci* and *Staphylococci*. Polymicrobial infections occur much less frequently. It is not recommended to routinely change central venous catheters because no time period has been established and they are not simple to change compared to peripheral venous catheters, but internal jugular and subclavian vein catheters may be used for two to three weeks at a time. Close monitoring of the insertion site is important and any signs of infection or hemodynamic instability are indications to change central venous catheters. It is recommended to avoid the femoral site for insertion due to increased risk of infection.

If blood cultures are positive at any time during management of hemodialysis patients,

repeat blood cultures should be obtained 48 to 96 hours after initiating treatment. Removal of the catheter is indicated if the repeat blood cultures remain positive. Our patient had a negative blood culture, which may have been due to early antibiotic administration. In conclusion, our report will serve as an example of keeping a high suspicion index for the diagnosis of infective endocarditis in patients with catheter-dependent hemodialysis despite negative blood cultures.

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CASE REPORT

Tumor Board Conference – Case #1: Breast Cancer

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A 75 year old female with a history of Hypertension, Chronic Obstructive Pulmonary Disease, and Diabetes Mellitus was admitted to the hospital status post left modified radical mastectomy. Patient was admitted for observation after surgery and received narcotics through PCA pump. The patient's hospital course was uncomplicated and pain was well managed. Patient was discharged home, with follow-up in both oncology and surgery.

The patient was diagnosed with breast cancer through an abnormal mammogram in early April 2015. The patient first noticed a lump in her breast for a week but had neither pain nor discharge from her nipples. There was no deviation of nipples and denied any masses within the axillary region. Physical exam demonstrated a two-centimeter breast mass, which was firm to touch, comprised of irregular borders, not tender to touch, moveable with location in the upper inner quadrant at the 10 o'clock position. There were no lymph nodes appreciated in the axillary region. There was no impairment to the structure of the breast. There was no nipple deviation or any inflammatory changes. Mammography studies, via spot compression and medio-lateral mammography of the left breast, demonstrated scattered fibro-glandular densities (**Figure 1**) and suspicious focal asymmetry of the left upper outer breast with speculated margins.

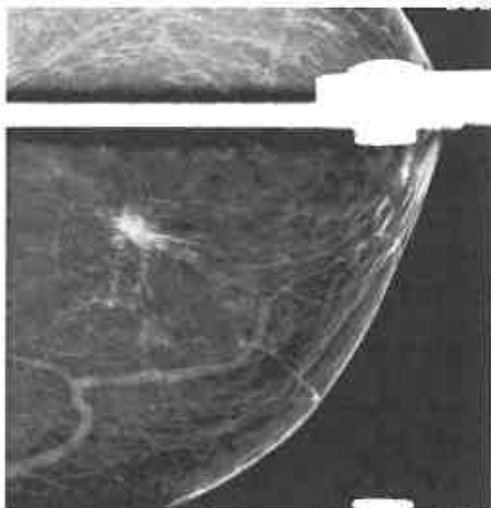


Figure 1: Mammogram with scattered fibro-glandular densities

A breast ultrasound was ordered immediate to the mammogram. Findings include two adjacent irregular hypo-echoic masses in the left upper outer breast (**Figure 2**), 10 o'clock position, which corresponds to the mammographic abnormality. The largest lesion

measured 9.7 x 7.3 x 5.9 mm. The adjacent smaller lesion measured 5.6 x 6.0 mm. Both lesions demonstrated posterior acoustic shadowing with no definite internal vascularity. Ultrasound of the left axilla did not reveal any abnormal axillary lymph nodes.

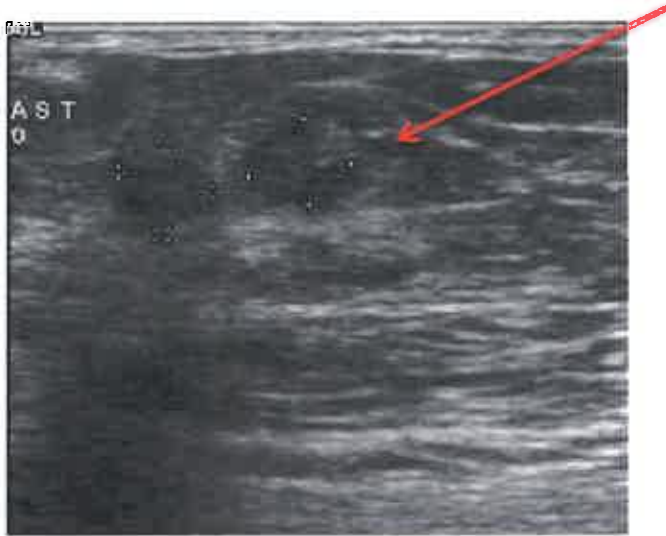


Figure 2: Ultrasound of breast with two adjacent irregular hypo-echoic masses (red arrow)

Patient was referred to surgery and a biopsy was performed, which showed invasive ductal carcinoma grade I with multiple areas of carcinoma in situ extending to inked surgical margins. Total of sixteen lymph nodes were identified in a removed portion of axillary fat of which one resembled metastatic tissue. However, no lympho-vascular or perineural invasions were seen. Microscopic descriptions include uniform cells vesicular nuclei with prominent nucleoli. The patient underwent successful surgery in May 2015 and is currently receiving oncological treatment in addition to tamoxifen/aromatase inhibitors.

Ductal carcinoma is a form of breast cancer characterized by abnormal cells within the milk producing lobules of the breast. This form differs from the precursor (ductal carcinoma in situ/DCIS) in regards to the carcinoma's invasive ability into the surrounding duct walls and breast tissue in addition to the ability to metastasize. Diagnosis often first starts with the patient physically noticing a hard, immovable lump upon self-examination. Physical findings such as bloody nipple discharge, inverted/deviated nipples or abnormal asymmetry may be seen. However, x-rays, ultrasound and mammography are all used in aiding diagnosis with biopsy remaining the gold standard.

Prognosis is mostly determined via pathology, with the most accurate factors remaining the extent of tumor size and metastasis to axillary lymph nodes. However factors such as nuclear grade, hormone receptor status, HER-2/Neu overexpression must also be taken into affect. Treatments include a multi-pronged approach involving radiation, surgical removal, anthracyclines, taxanes, endocrine therapy and aromatase inhibitors. Cosmetic conservation of breast tissue is based upon micro-calcifications on mammography, multi-centric tumors upon physical examination or mammography or persistent skin edema. (Longo 2014) Neoadjuvant chemotherapy is used for cases of inoperable or advanced

cases. However, due to the increased efficacy through this traditional solution for inoperable cases has led to the increased use in cases for operable pathologies. Biphosphonates have proven efficacy in reducing skeletal effects in patients with bony metastasis.

In the past half-century, the diagnosis, prognosis and treatment options for early stage breast cancer have improved significantly. Treatment options via neo-adjuvant, hormonal and taxane therapy all aid in improving the patient's quality of life.

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CASE REPORT

Tumor Board Conference – Case #2: Adenocarcinoma of the Lung

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A 56-year-old male presented to the ER for acute onset shortness of breath. In the ambulance, the patient was placed on BiPAP but continued to be diaphoretic, agitated, confused and suffered respiratory distress. On admission, the patient was intubated and transferred to the ICU. Patient had bilateral air entry. No other remarkable physical findings were found. Patient history was positive for both asthma and hypertension while unknown for tobacco use. Initial diagnosis was believed to be an acute exacerbation of asthma. Portable chest x-ray showed no acute findings. Admission laboratory results showed metabolic and respiratory acidosis, hyperglycemia, methemoglobinemia, leukocytosis, neutrophilia and thrombocytosis.

A physical exam done the following day showed a new left-sided neck swelling along with submandibular lymphadenopathy. Repeat labs showed an increase in leukocytosis from 19.81×10^3 on initial to 24.15×10^3 . Thrombocytosis resolved, while the neutrophilia increased from 12.73×10^3 to 22.92×10^3 . Lymphocytes decreased from a normal first day value to 0.49×10^3 . A second chest x-ray revealed bilateral interstitial opacities that could reflect interstitial edema and/or pneumonitis. Bilateral pneumonia was confirmed, and treatment was initiated based on the sputum culture. A CT of the lung (**Figure 1**) with contrast was ordered, which revealed a left upper lobe lung mass, enlarged left hilar lymph nodes, and bilateral reticular nodular lung lesions.

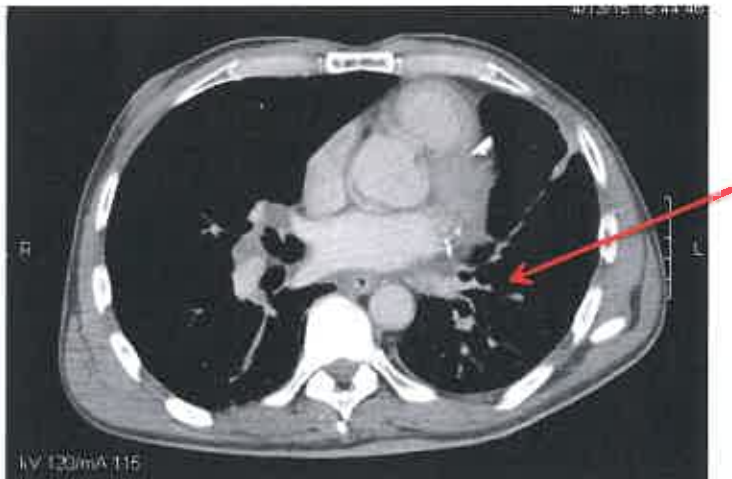


Figure 1: CT Chest with left hilar lymphadenopathy (red arrow)

Four days after admission and the resolution of symptoms, patient was successfully extubated. After awaking, patient complained of hoarseness in voice. Additionally, there

was right lower extremity numbness and weakness that had been going on for several weeks. Patient had right hemiparesis and cord compression was suspected, a subsequent CT of the lumbar spine was ordered, which revealed mild spinal stenosis and possible left lateral recess stenosis at L4-L5. There was mild to moderate bilateral neural foramina narrowing at this level. Central disc bulge at L5-S1 with mild to moderate bilateral neural foramina narrowing at this level. Both mixed lytic/sclerotic lesions were noted. Metastatic disease was not excluded. Following CT results, a bone scan revealed intense focal uptake in the right sacrum compatible with osseous metastatic disease. Subtle uptake in the T10 and L1 vertebral body likely reflect additional areas of metastatic disease. The CT of the head (**Figure 2**) revealed a 3cm mass in the left parietal lobe with surrounding white matter edema. No acute intracranial hemorrhage, shift of midline structures or hydrocephalus were found.

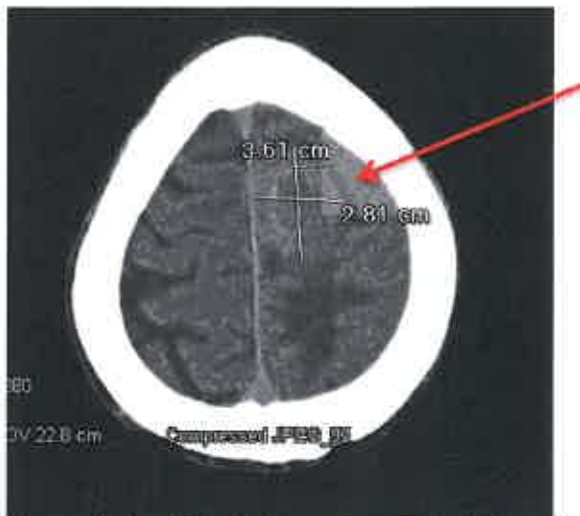


Figure 2: Head CT with 3cm mass in the left parietal lobe (red arrow) with surround edema

After the diagnosis of metastatic lung carcinoma was made, oncology was consulted. The left lung mass was biopsied with samples sent to pathology. H & E staining confirmed non-small cell, adenocarcinoma of the lung. Immunohistochemistry was ordered for further confirmation of the tissue of origin. Patient was treated with radiation therapy. CEA levels were drawn and COPD management was initiated. CEA levels were elevated to 54.8 ng/ml (N= 0.5-2.5). Decadron was started to decrease edema around the brain metastasis. Patient continued radiation therapy, steroids, IV antibiotics and pain medication until discharged from the hospital.

Adenocarcinoma (non-small cell) is the most common type of lung cancer, accounting for approximately one-half of lung cancer cases. It is the most common pathology among non-smokers and risk factors include second hand tobacco smoke, radon, and other environmental exposures. The most common clinical manifestations of non-small cell lung cancer are cough, hemoptysis, and dyspnea.

Patients with suspected non-small cell lung carcinoma (NSCLC) should undergo CT scan of the chest and upper abdomen (usually contrast-enhanced) to determine the extent of the

primary tumor and potential metastasis. A diagnosis of NSCLC is made based upon the pathologic evaluation of cytological (example, pleural fluid) or histopathology (example, tissue biopsy) specimens. The initial radiographic staging improves the selection of a biopsy site and preferred mode to obtain a pathologic sample. The brain, the bones, and the area around the lungs (pleural space) are common places for cancer to spread in people with NSCLC. The prognosis of patients with NSCLC and brain metastases is highly variable.

The prognosis of patients with bone and brain metastases is poor with a median survival of less than one year. The initial stage in the management of lung cancer is to confirm the diagnosis of cancer and to assess whether the patient has a non-small cell lung cancer (NSCLC) or a small cell lung cancer (SCLC), the stage of the disease, and the overall performance status of the patient. For patients with early stage disease, surgical resection offers the best prospect for cure, while concurrent chemo-radiotherapy is preferred for those with more extensive intra-thoracic disease.

Patients with advanced disease are managed with palliative care and with systemic therapy and/or local palliative modalities. Patients with NSCLC and newly diagnosed brain metastases should be managed with radiation therapy and/or surgery.

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Sources must be properly cited and referenced. Please see articles in this journal for examples on formatting.

Research Articles

- The order of presentation should include but not limited to title, abstract, introduction, methods, results and discussion, illustrations and figures, conclusions, and references.
- Tables and figures should have a title and be numbered. If the table or figure has been published previously, include the complete reference as well as a letter granting permission from the previous publisher.

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- Authors are encouraged to submit case reports on cases from Jackson Park Hospital, in any specialty. Along with the case presentation, it is advisable to include a discussion on the disease process.

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