

## A case of Cryptogenic Organizing Pneumonia in a seventh-decade woman. "Yahya Al-FIFI's Diagnostic Criteria for Cryptogenic Organizing Pneumonia (COP) Without Lung Tissues Biopsies for Histopathology".

Is This the Truth of the Reality Or The Reality of the Truth?

Yahya Salim Yahya AL-FIFI

Consultant, Internal Medicine & Infectious Diseases, Department of Medicine, Infection Diseases Division, Prince Mohammad Bin Nasser Hospital, Jizan, Jazan, Saudi Arabia. Email: [yahyaalfifi@hotmail.com](mailto:yahyaalfifi@hotmail.com)

### \*Corresponding author

Yahya Salim Yahya

### Article History

Received: 19.11.2017

Accepted: 24.11.2017

Published: 30.11.2017

### DOI:

10.21276/sjm.2017.2.7.4



**Abstract:** We describe the first and rare case report of a cryptogenic organizing pneumonia (COP) in a seventh decade diabetic and hypertensive woman from low highlands, Jazan, Saudi Arabia. The evidence of the clinical scenario, laboratories testing, radiological images findings followed by a significant improvement due to steroid treatment are quite enough to diagnose COP, irrespective of the lung tissues biopsies procedures and processing accessibility for histopathology, in a timely manner as reveals in "Yahya Al-FIFI's diagnostic criteria for cryptogenic organizing pneumonia (COP) without lung tissues biopsies for histopathology". We started a methylprednisolone forty milligrams intravenously every eight hourly for seven days which is showing a dramatic clinical improvement within initial twenty-four hours of the first seven days and complete recovery clinically and radiologically, at the end of the following fourteen days of tapering prednisolone doses without a relapse for seven months. Our successful experience approach in this case of COP has several advantages including but not limited to an early diagnosis and management by the introduction of methylprednisolone that may lead to preserve lung function, an avoidance of biopsies procedure complications, may prevent relapses, an early hospital discharge, an improvement of the morbidity, mortality and the quality of life of the patient. We observe that beta-lactam; ceftriaxone and piperacillin/tazobactam, glycopeptide; vancomycin and macrolide; clarithromycin antibiotics classes are not effective therapy in our patient COP case scenario. "Yahya Al-FIFI's diagnostic criteria for cryptogenic organizing pneumonia (COP) without lung tissues biopsies for histopathology" is easy and sufficient enough for a physician to assess the patient in order to diagnose COP and treat with steroid (methylprednisolone) in an acceptable time frame and may have favourable outcome overall.

**Keywords:** cryptogenic organizing pneumonia (COP), prednisolone, Yahya Al-FIFI's diagnostic criteria

## INTRODUCTION

Cryptogenic organizing pneumonia (formerly BOOP; Bronchiolitis Obliterating Organizing Pneumonia) is a description of a form of an idiopathic interstitial pneumonitis. It is a clinical, radiological and histopathological syndrome that affected the lung tissues that are described as a condition of unknown etiology to date, where the lung tissues histopathologies demonstrate that inflammatory cells mainly lymphocytes that involve frequently the lung tissues peripherally and centrally. The alveolar wall ducts, respiratory bronchioles, and distal bronchioles are the most widely and variably affected [1-4]. The radiological images of COP may reveal unilateral or bilateral extensive pneumonia in a form of consolidations, air bronchograms, nodular opacities and ground glass appearance on a plain chest x-rays images in addition to a form of a crazy paving radiological

images appearance that may be reflected in a chest high resolution computerized tomography (CT/HRCT) scan but not specific for acute or chronic COP [1-4]. COP may be postulated to be due to or associates with various factors including; connective tissue diseases, malignancies, hematological, solid tumors, drugs, chemical, toxins, allergens, and dust [1-9].

The patient with COP may present with a picture of acute clinical features of typical or atypical community-acquired pneumonia or chronic longstanding pulmonary symptoms that require initiation of an empirical antimicrobial whereas the rest of work up process including microbiology samples; bacterial, mycobacterial, fungal, parasitic and biopsy of the lung for histopathology to confirm the diagnosis of COP is in place [5].

Acute or chronic COP usually has an excellent outcome response to steroid treatment; however, relapses are a benign phenomenon that could be easily managed with steroid treatment where a favorable outcome occurs [9, 10]. COP may be suspected only by radiological solitary or diffused infiltrates bilaterally that showed characteristics radiological features that may suggest a wide differential diagnosis including COP where further evaluation is required including a lung biopsy to delineate the etiology [1-9]. A feasibility of biopsy may be obscured for several reasons including patient refusal to consent for the lung biopsy or an inaccessibility setting for the procedures. So, in the view of patient clinical respiratory status deterioration where further investigation is guarded or pending, it is a quite reasonable approach to start treatment with steroid mainly depending on clinical deterioration of the patient, absence of a pathogen recovery, the lack of response to empirical appropriate antimicrobial choices considering the duration in the view of the reflection of radiological imaging findings that suggestive of COP as reveals in this case report.

#### CASE PRESENTATION

A 61-year old woman, a villager, lives in the low highland of Jazan, Saudi Arabia. She presented with shortness of breathing, dry cough, which becomes productive with greenish sputum and fever for seven days. She was brought to the emergency department, with worsening of her shortness of breathing, fever, chills, and shivering. Patient has no history of chest pain, orthopnea, paroxysmal nocturnal dyspnea or lower limbs swelling. There is no history of a headache, dizziness, visual complaints, weakness, seizures, gait instability or sphincters disturbances. She is non-alcoholic, non-smoker or drug abuser. She lives in an environment where fifty days of sandstorms blow annually in the summer. Her past medical history is significant for diabetic type II requiring insulin, hypertension on metoprolol 100 milligrams daily, aspirin 81 milligrams orally once a day, amitriptyline 25 milligrams for anxiety at night. She has no history of tuberculosis or brucellosis. The travel, family, and social histories are unremarkable. The rest of systemic were non contributable.

On examination of her presentation to the emergency department, she reveals an overweight female in her estimated age. She is conscious, oriented to time place person. Vital signs reflect a temperature of 39.0° C and respiratory rate is 25 breaths per minute. The pulse

is 120 beats/minute, blood pressure 130/75 mmHg, and saturation is 88 % in room air and 96% on 2 L/minute (via nasal prongs). The jugular venous pressure is 4 centimeters above the sternal angle with normal hepato-jugular reflux. She is not pale or jaundiced and no lymphadenopathy enlargement. Chest showed symmetrical movement expansion limitation bilaterally. She has a bronchial breathing with scattered rhonchi

bilaterally. The cardiovascular system examination reveals first and second heart sounds are normal but no added sound, murmurs or lower limb edema. The abdominal examination reveals an inverted umbilicus. There are bilateral flank bulgings, but no scar, hepatomegaly, splenomegaly, masses or ascites. The neurological, the peripheral vascular, and the locomotors examinations are normal. Skin examination revealed no rash, joint deformities or nodules. Genitourinary system examination was normal.

The initial Investigation showed WBC 5.70 with 78.7% neutrophil, hemoglobin is 12.7 gram/dl (normal 12-16 gram/dl) and platelets is  $183 \times 10^9$  per liter. (Normal;  $150-400 \times 10^9$  per liter.), liver function test showed aspartate transaminase (AST) 55 (normal up to 40 U/L), alanine transaminase (ALT) 49, (normal up to 40 U/L), alkaline phosphatase (ALP) 77 (normal 39-112 U/L), lactate dehydrogenase LDH) 250 (normal 72-182 U/L) albumin 27 (normal up to 38-50g/L), calcium 2.04 (Normal 2.0-2.6 mmol/L) and total protein 71 (normal up to 66-87g/L), where total and direct bilirubin, renal profile, lipid profiles, phosphate, magnesium, prothromin time, Partial thromboplastin time, and bleeding time were within normal limits. Chest X-rays revealed bilateral patchy consolidations, air bronchogram, ground glass appearance and nodularity's shadow infiltrate (image I). Ultrasound shows a mild hepato-splenomegaly with normal kidneys sizes, no masses where the rest of the abdominal examination are normal. A sputum for gram stains, bacterial and fungal cultures, acid fast bacilli, tuberculosis polymerase chain reaction (PCR) and cultures, viral studies and two sets of blood cultures are obtained prior the initiation of antibiotics; a ceftriaxone and clarithromycin are started empirically. Patient is admitted for further evaluation and management.

Our patient is admitted to hospital with diagnosis of community acquired pneumonia where ceftriaxone 2 grams intravenous every 24 hour and clarithromycin 500 milligram orally twice daily as an empirical treatment for a typical and atypical pneumonia organisms. The patient background indicated that she is known to have diabetes type II requiring insulin with hemoglobin A1C 7 (normal up to 6.4) and hypertension, which is well control on metoprolol without microvascular or macrovascular complications.

In spite of that the patient pulmonary status continued to deteriorate over following 48 hours of hospitalization where she requires oxygen up to 10 L/minute (via nasal prongs) to maintain her oxygen saturation above 94%. A bilateral patchy diffused consolidation, nodularity, air bronchogram and areas of ground glass appearance that become more evident in the repeated chest x-ray in the second day of hospitalization compare to initial chest x-rays on admission. Considering the clinical contest of this case scenario a wide differential diagnosis is entertained

included infection; bacterial, fungal, mycobacterium tuberculosis and viral, connective tissue diseases; rheumatoid arthritis and mixed connective tissue diseases, malignancy, chemicals, toxins, environmental factors; dust, pollens and cryptogenic organizing pneumonia.

On the 3<sup>rd</sup> day of hospitalization (10<sup>th</sup> day of the illness) a clinical and radiological deterioration dictates discontinuation of ceftriaxone and oscillating it to piperacillin/tazobactam 4.5 gram every 6 hourly intravenously. A vancomycin 1 gram intravenously every eight hourly for possibility of resistance pneumococcus or streptococcus pneumonia is added. A clarithromycin is continued to cover atypical bacterial pneumonias; legionella pneumophila, mycoplasma pneumoniae and, chlamydia pneumonia. A high resolution computerized tomography (CT/HRCT) images appearance that reveals bilateral diffused consolidations with air bronchograms, infiltrative nodularity's shadows, ground glasses appearance matching the chest-rays findings (Image - 1, 2, 3) in addition to a crazy paved pattern (Image - 4, 5) that are compatible with diagnosis of COP in this case reports.

On the 4<sup>th</sup> day of hospitalization (11<sup>th</sup> day of the illness) she becomes exhausted and her oxygen saturation dropped to 88 on 15 L/minute (via nasal prongs) where she requires an intubation and ventilation. The sputum gram stains and cultures for bacteria and fungal, acid-fast bacilli and polymerase chain reaction (PCR) for tuberculosis, blood culture and viral studies for influenza A and B and H1 N1 are negative.

However, in the view of this clinical deterioration of the patient and the evidence of absence of a pathogen recovery that may attribute to the

declining in patient respiratory status, the lack of responding to appropriate antibiotics coverage, worsening of the radiology imaging findings pattern in the serial chest x-rays and CT/HRCT scan over five days duration, that suggestive of cryptogenic organizing pneumonia (COP), and infeasibility of a bronchoscopist or intervention radiology procedure to perform a biopsy in addition to a practical delay that may occur in obtaining the histopathology biopsy report to delineate the cause at the time. We concluded that the diagnosis, clinically and radiologically, is cryptogenic organizing pneumonia, irrespective of performing a lung tissue biopsy to prove COP diagnosis histopathologically.

We started on the fifth day of hospitalization; 12<sup>th</sup> day of the illness a methylprednisolone 40 milligram intravenously every 8 hourly, where we observe that the patient starts to show a significant clinical improvement in the initial twenty four hours of methylprednisolone treatment where within ninety six hours patient is extubated and transfers to the ward. The patient clinical improvement accompanies with radiological images that reveals a significant interval changes improvement (Images 1,2,3,4 and5).

The patient is discharged from the hospital on tapering doses of prednisolone for two weeks to complete total course of three weeks of steroid. A CT/HRCT scan chest at the end of the three weeks of steroid tapering doses shows a very significant interval improvement radiologically as reflected in (Fig-4, 5), where the bilateral diffuse patchy opacities, nodularity's shadow infiltrate consolidation and air bronchograms with ground glasses appearances are resolved. Patient is able to return to her normal daily life style activities without any relapse up to seven months post discontinuation of prednisolone.



Image-I: Chest X-ray (on 1<sup>st</sup> day of methylprednisolone treatment)



**Image-II: Chest X-ray (on the 2nd day of methylprednisolone treatment)**

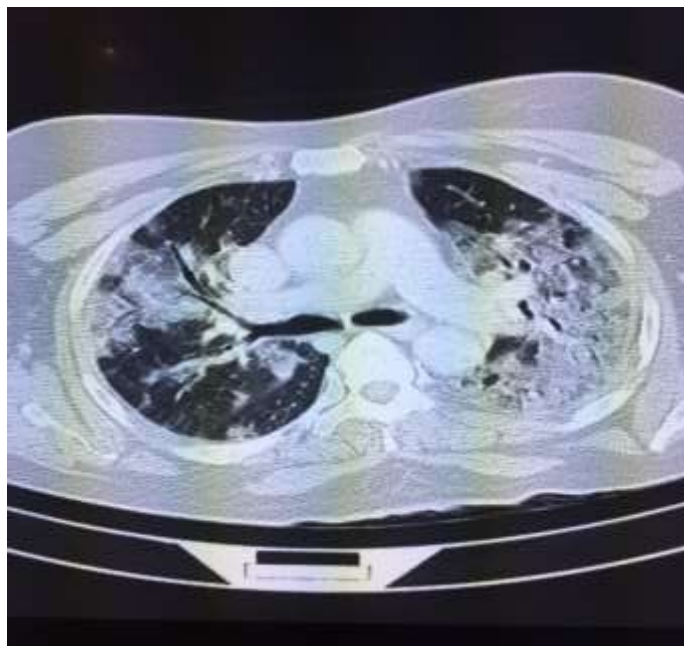


**Image-III: Chest X-ray image (on the 5<sup>th</sup> day of methylprednisolone treatment)**

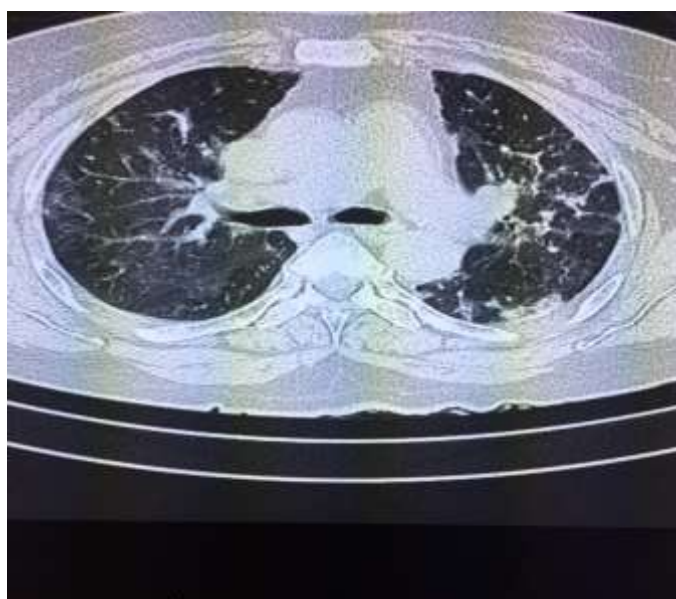
(Table – I)

**“Yahya Al-FIFI’s Diagnostic Criteria For Cryptogenic Organizing Pneumonia(COP)  
Without Lung Tissues Biopsies For Histopathology”**

<p><b>“Yahya Al-FIFI’s diagnostic criteria for cryptogenic organizing pneumonia(COP) without lung tissues biopsies histopathology” All the eleven Criteria 4 Clinical, 3 Radiological, 2 Laboratories testing and 2 Treatment criteria are required for the diagnosis of COP</b></p>
<p><b>Clinical (4 Criteria) (General and pulmonary)</b></p>
<p><b>I-</b>One general symptom: fever, appetite or weight sweating, etc.. within the first 5 days.</p>
<p><b>II-</b>One pulmonary symptom: Cough or shortness of breathing, etc.... within the first 5 days.</p>
<p><b>III-</b>One pulmonary sign: Bronchial breathing, rhonchi, dullness, etc. within the first 5 days.</p>
<p><b>IV-</b>One oxygen desaturation from a room air within the first 5 days.</p>
<p><b>Radiology (3 Criteria)</b></p>
<p><b>V-</b> One chest x-rays and/or CT/HRCT scan image abnormality within the first 5 days.</p>
<p><b>VI-</b> No chest x-rays and/or CT/HRCT scan image abnormality of specific pathogen or pathology i.e. TB, fungal, parasitic or tumor within the first 5 days.</p>
<p><b>VII-</b>No evidence of pulmonary embolism; negative D-Dimer or pulmonary angiography within the first 5 days.</p>
<p><b>Laboratories testing (2 Criteria) (Microbiology and pathology testing)</b></p>
<p>(Microbiology)</p>
<p><b>VIII-</b> No evidence of pathogen that is recovered by any means within the first 5 days</p>
<p>(Pathology)</p>
<p><b>IX-</b> No lung tissue biopsy for histopathology is done within the first 5 days</p>
<p><b>Management (2) (Empirical and specific treatments)</b></p>
<p>Empirical treatment</p>
<p><b>X-</b> No evidence of response to appropriate antimicrobial coverage within the first 5days.</p>
<p>Specific treatment</p>
<p><b>XI-</b> Excellent response to steroid (methylprednisolone) course within the first 5 days</p>



**Image-IV: Chest CT image (on the 1<sup>st</sup> day of methylprednisolone treatment)**



**Image -V: Chest CT image (on the 15<sup>th</sup> day of methylprednisolone treatment)**

## DISCUSSION

A cryptogenic organizing pneumonia is a quite rare disease and may mimic clinical manifestations and chest radiological images of several diseases categories including infectious diseases, connective tissue diseases and malignancies that require a lung biopsy to prove the diagnosis histopathologically. COP is a diagnosis that requires a low threshold of a clinical suspicion, in order to implement therapy to rescue the patient life with steroid, in the absence or existence of the means to perform lung biopsies for histopathological diagnosis confirmation [1-9]. However, lung biopsies procedures and histopathology processing accessibility, in a timely manner, is a quite challenging issue for the physician at

the time of the clinical suspicion and may delay the therapy decision.

In the view of our patient clinical status deterioration; where the patient oxygen demands requirements increases progressively, the respiratory exhaustion manifest in a form of exerting an accessory respiratory muscles, and the radiological images evidence of bilateral patchy consolidations, air bronchogram, ground glass appearance and nodularity's shadow infiltrate that are visualized in both the chest x-rays images (Images-I, II and III) and a chest CT/HRCT images (Images-IV and V) in addition to a crazy paved patterns images in (images IV and V) that worsening over the five days of hospitalization where all findings

are compatible with the diagnose of COP. In addition to the infeasibility of lung tissue biopsy and the expected delay in the processing time in order to obtain the histopathology report to confirm the diagnosis of COP. We depends on the clinical deterioration of the patient respiratory status, worsening of radiological findings, and absence of recovery of any pathogen by any means within five days of appropriate coverage of antibiotics, are convincing collective evidences and sufficient enough for us to diagnose our patient with COP. Hence we started steroid in a form of methylprednisolone considering and admitting the clinical, laboratories and radiological supportive evidences in the view of the absence of lung biopsy.

We observe that the patient rapid improvement response to intial dose of steroid (methylprednisolone) occurrence confirms the diagnosis of COP at the glance. However, the dramatic response of the patient occurs due to the short course of methylprednisolone 40 mg every eight hourly within the initial twenty –four hours, and continues to improve within the first seven days of treatment, where she is extubated, transfer to the ward and discharge home on tapered prednisolone for two weeks. We found this approach is enough diagnostically and effective therapeutically simultaneously for a cute form of COP. We believe that, in spite of her old age , hypertensive and diabetes mellitus type II requiring insulin without microvascular or macrovascular, however, we observe important critical factors that have led to our patient excellent outcome. These factors are the early clinical suspicion, characteristic of radiological images findings (chest x-rays and CT/HRCT scan) that highly suggestive of manifestation of COP, the early initiation of methylprednisolone within the first two weeks of her initial symptoms for seven days, followed by rapid prednisolone tapering doses over two weeks, the absence of underlying pulmonary diseases. The early initiation and abrupt starting of the management with methylprednisolone without a delay in order to perform a lung tissue biopsies for histopathology diagnosis, as in the view of our case scenario therapeutic approach, that leads to confirm the diagnosis of COP and has an excellent outcome.

This approach has several advantages; minimize the effect of the inflammatory process rapidly, preserve the patient lung physiology abruptly, avoidance that the patient may develop the acute adverse effects of methylprednisolone; “hypertension and bilateral pleural effusions” as describe in “Yahya Al-Fifi’s Syndrome” and chronic adverse effects; include but not limited to mode changes, osteoporosis, risk of hip fractures, bleeding and capillaries fragilities.

We observe that the excellent outcome of our patient based on early diagnosis and introduction of a short course of methylprednisolone that associates with no relapse for seven months, which may remain forever.

We believe the early and a short course of methylprednisolone cures an acute form of COP and prevents relapsing and the progression of the disease to a chronic form of COP, as manifests in our patient scenario. However, this observation requires a multicenter study to evaluate these clinical facts that base on our case report scenario.

Cryptogenic organizing pneumonia have been treated successfully with macrolide; clarithromycin, with less adverse effect and relapses compare to steroid, however, it was given for three months where up to one-third of patient are cured [2]. We found our empirical treatment, macrolide; clarithromycin, Vancomycin and beta-lactam; ceftriaxone that was osculates, to piperacillin-tazobactam are ineffective. In fact, macrolide; clarithromycin is introduces on admission for seven days that associates with deterioration in the patient clinical pulmonary status. Our patient is able to recover as short course of methylprednisolone introduces without adverse effect, which led us to discontinue antibiotics therapy [2, 10-12].

In searching for the cause of COP at this point we remain uncertain however, we entertain a hypothetical idea that the etiology may be environmental that may remain obscured for now probably forever in the absence of a lung tissue biopsy that may be of a limited benefit at this time for patient management issue is concerned, to confirm the diagnosis histopathologically. However, in case of relapse our hypothesis is remaining in the way of searching for the cause. We entertain that the patient lives in a habitat that is enriched of farms, rivers, sheep’s pastures, landscapes, agricultures areas, and receives an annual rains that proceeded by up to fifty days of heavy red or black sandstorms that blows toward the province of Jazan, Saudi Arabia from African continent in the summer with various speeds ranging from 70 to 120 kilometer .Jazan, Saudi Arabia is located in the southwest of the country; in the southwest corner of Asia, across the African horn countries in the south-east corner of the African continent, facing each other across the red sea. These environmental factors may play a role in her diagnosis that will probably remain a research question, which requires epidemiological studies to evaluate COP in the low highlands of Jazan, Saudi Arabia in more depth of searching for the environmental etiologies. We remain to entertain the diagnosis of COP etiology of the case and ask this critical question, why and why now? [1-12].

The diagnosis of cryptogenic organizing pneumonia is proved in our patient by a clinical suspicion of COP, lack of response to appropriate broad spectrum of antibiotics, lack of recovering of any pathogen, worsening of the radiological imaging of chest x-rays and CT/HRCT scan findings and a dramatic therapeutic response to methylprednisolone in

the first twenty four hours. We extubate and transfer the patient to the ward within two days to completing seven days course of methylprednisolone treatment. Then, the patient is discharged home on tapering steroid doses in a form of prednisolone for two weeks where the total course of the therapy of steroid is three weeks. The patient shows a significant improvement of the clinical and pulmonary status and the radiological images at the end of the tapering prednisolone therapy without relapse for seven months (Images - I, II, III, IV and V).

However, we observe that the diagnosis based on clinical, laboratories testing, radiological images findings evolution reflections over time, treatment responses to steroid in the absence of lung tissue biopsies for histopathology are enough to confirm COP diagnosis. This collective clinical, laboratories, chest radiology imaging finding (Images- I, II, III, IV and V), patient pulmonary status deterioration in spite of appropriate broad spectrum antibiotics and the absence of other diseases evidence, is an acceptable and reasonable approach to diagnose COP in order to safe patient life in the infeasibility of lung tissue biopsies for histopathology as a gold standard diagnostic mean to confirm COP, in the view of the absence of the existence of a diagnostic test to confirm COP to date.

Diagnostic criteria without a lung biopsy for COP is highly demanded, considering several factors including accessibility of procedure and possessing time of histopathology of lung tissue biopsies that may delay the treatment and worsens the patient outcome. So, we decide to create a criteria that should include clinical, laboratories testing; sputum for bacteria and fungal gram stains and cultures, sputum for acid fast bacilli and polymerase chain reaction for mycobacterium tuberculosis, sputum for cytology, blood cultures, chest radiological images evidences, and excellent response to steroid treatment collectively, that considered satisfactory to diagnose COP where a lung tissue biopsies for histopathology is not accessible or required. We believe these criteria are quite enough, easy, fast and helpful in timely manner to diagnose and treat COP and have an excellent outcome as a result.

We called these criteria “Yahya Al-FIFI’s cryptogenic organizing pneumonia diagnostic criteria without lung tissues biopsies for histopathology” (Table - I). The diagnostic criteria comprise of eleven criteria; clinical (4 criteria), radiological (3 criteria), laboratories testing (2 criteria) and treatment (2 criteria) where the patient requires to have all the eleven criteria in order to fulfill the diagnostic criteria of COP without a lung tissue biopsies for histopathology. The eleventh criterion (Table-I) is the cornerstone of the criteria, where the patient will receive a steroid (methylprednisolone 40 milligram intravenously three times daily for 5 days), if improvement is observed then the diagnosis of COP is confirmed. However, if the patient improvement is lacking, the performance of a

lung biopsy to delineate the diagnosis etiology is mandatory.

In order to diagnose COP applying “Yahya Al-Fifi’s diagnostic criteria for cryptogenic organizing pneumonia (COP) without lung tissues biopsies for histopathology” you are required to have all the eleven criteria as described in (Table –I); I-one general symptom within the first 5 days, II-one respiratory symptom within the first 5 days, III-one respiratory sign within the first 5 days, IV-one oxygen desaturation within the first 5 days, V-one chest radiology finding in chest x-rays and CT/HRCT scan within the first 5 days, VI-no radiological abnormality of specific pathogen as mycobacterium tuberculosis, fungal or parasitic within the first 5 days, VII-no pulmonary embolism which confirm by negative D-dimer or pulmonary angiogram within the first 5 days , VIII-no evidence of pathogen recovered by any means from sputum and blood including gram stains and bacterial and fungal cultures, mycobacterium tuberculosis acid fast bacilli, culture and polymerase chain reaction and blood cultures within the first 5 days, IX- no lung tissue biopsies for histopathology within the first 5 days, X-No response to appropriate broad spectrum antibiotics within the first 5 days, XI- Response to steroid treatment ( methylprednisolone) within the first 5 days.

We report the first case report of COP from Jazan, Saudi Arabia, to show our successful diagnostic and therapeutic approach for COP, that is depends on the fact that it is enough to have a low threshold of a high clinical suspicion, laboratories testing, radiological images findings and steroid induce excellent clinical improvement without any need for a lung tissues biopsies to confirm COP histopathologically, in order to start methylprednisolone. We may say even at the best scenario of accessibility to histopathological diagnosis this approach is faster, quite reasonable and acceptable.

Yahya Al-FIFI’s diagnostic criteria for COP (Table- I) are very practical to diagnose and manage simultaneously. We believe our approach is very safe and facilitate an early discharge of the patient from the hospital and improve morbidity, mortality and the patient quality of life. It leads to excellent outcome, and without relapse as in our patient case scenario expresses for seven months.

## CONCLUSIONS

Cryptogenic organizing pneumonia (COP) is a rare manifestation of unknown etiologies to date. COP has wide differential diagnoses where it may be usually mimicking chronic obstructive pulmonary diseases exacerbation or community acquired pneumonia presentation. The recognition of COP requires meticulous, close and frequent reevaluation, and a lung



biopsy for histopathology diagnosis. However, if the COP, diagnostic procedures, settings, are inaccessible, in a timely manner, then, the clinical, laboratories testing, radiological findings, the lack of response to appropriate initial antimicrobial therapy, and the excellent improvement response due to, steroids treatment is quite enough to diagnose COP without a lung tissues biopsies for histopathology as described in "Yahya Al-FIFI's diagnostic criteria for cryptogenic organizing pneumonia (COP) without a lung tissues biopsies for histopathology" (Table- I). The steroid introduce in a form of a methylprednisolone and prednisolone, for seven days and fourteen days respectively, which induces a complete recovery of our patient clinical and radiological manifestation without a relapse of COP for seven months.

This is the first case report of COP from Jazan, Saudi Arabia. This case report scenario support starting therapy with steroid depending on the clinical, laboratories testing and radiological images findings that compatible with COP without a need for lung biopsies for histopathology to confirm the diagnosis of COP applying "Yahya Al-FIFI's diagnostic criteria for cryptogenic organizing pneumonia (COP) without a lung tissues biopsies for histopathology" (Table- I). This approach is very safe, facilitates early hospital discharge, and improves morbidity, mortality and the patient quality of life.

"Yahya Al-FIFI's diagnostic criteria for cryptogenic organizing pneumonia (COP) without a lung tissues biopsies for histopathology (Table- I)" is easy, rapid and sufficient enough to diagnose COP and treat in an acceptable time frame, which preserve lung tissues and leads to a favorable outcome over all.

## REFERENCES

- Epler, G. R., Colby, T. V., McLoud, T. C., Carrington, C. B., & Gaensler, E. A. (1985). Bronchiolitis obliterans organizing pneumonia. *New England Journal of Medicine*, 312(3), 152-158.
- Sara, A. G., Hamdan, A. J., Hanaa, B., & Nawaz, K. A. (2008). Bronchiolitis obliterans organizing pneumonia: pathogenesis, clinical features, imaging and therapy review. *Annals of thoracic medicine*, 3(2), 67.
- Lee, K. S., Kullnig, P., Hartman, T. E., & Müller, N. L. (1994). Cryptogenic organizing pneumonia: CT findings in 43 patients. *AJR. American journal of roentgenology*, 162(3), 543-546.
- Johkoh, T., Itoh, H., Müller, N. L., Ichikado, K., Nakamura, H., Ikezoe, J., ... & Nagareda, T. (1999). Crazy-paving appearance at thin-section CT: spectrum of disease and pathologic findings. *Radiology*, 211(1), 155-160.
- Cornelissen, R., Senan, S., Antonisse, I. E., Liem, H., Tan, Y. K., Rudolphus, A., & Aerts, J. G. (2007). Bronchiolitis obliterans organizing pneumonia (BOOP) after thoracic radiotherapy for breast carcinoma. *Radiation Oncology*, 2(1), 2.
- Yamanda, S., Kobayashi, S., Hanagama, M., Sato, H., Suzuki, S., Ueda, S., ... & Yanai, M. (2016). Two cases of tsunami dust pneumonia: organizing pneumonia caused by the inhalation of dried tsunami sludge after the 2011 Great East Japan earthquake. *Internal Medicine*, 55(24), 3645-3653.
- Kahraman, H., Tokur, M., Sayar, H., & Inci, M. F. (2013). Cryptogenic organising pneumonia presenting with bilateral hilar and mediastinal lymphadenopathy. *BMJ case reports*, 2013, bcr2013009712.
- Alasaly, K., Müller, N., Ostrow, D. N., Champion, P., & Fitzgerald, M. J. (1995). Cryptogenic Organizing Pneumonia A Report of 25 Cases and a Review of the Literature. *Medicine*, 74(4), 201-211.
- Cordier, J. F. (2004). Cryptogenic organizing pneumonia. *Clinics in chest medicine*, 25(4), 727-738.
- Radzikowska, E., Wiatr, E., Langfort, R., Bestry, I., Skoczylas, A., Szczepulska-Wójcik, E., ... & Roszkowski-Śliż, K. (2017). Cryptogenic organizing pneumonia—Results of treatment with clarithromycin versus corticosteroids—Observational study. *PLoS one*, 12(9), e0184739.
- Ding, Q. L., Lv, D., Wang, B. J., Zhang, Q. L., Yu, Y. M., Sun, S. F., ... & Deng, Z. C. (2015). Macrolide therapy in cryptogenic organizing pneumonia: A case report and literature review. *Experimental and therapeutic medicine*, 9(3), 829-834.
- Al-Fifi, Y. S. Y. (2017). A methylprednisolone induced hypertension and bilateral pleural effusions as acute adverse effects in a young woman "Yahya Al-Fifi's Syndrome". *Saudi Journal of Medical and Pharmaceutical Sciences*, 3(7), 653-657.