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RESEARCH ARTICLE

THE EFFECT OF DIFFERENT TREATMENT REGIMENS AMONG PATIENTS WITH INTERSTITIAL LUNG DISEASES OF UNKNOWN ETIOLOGY

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Abstract

Interstitial Lung Diseases (ILD) are a collection of parenchymal lung disorders classified together for its similar clinical, radiographic and pathological manifestations. It is characterized by scarring and fibrosis of the lung interstitium. Several biomarkers including clinical and radiological biomarkers have been proposed to predict the stage and progress of the disease. In Saudi Arabia, there are no studies yet that has discussed the best treatment approach to those patients. For that, our research had focused about gathering informationabout the use of steroids, and whereas it had an effect on the disease progression.Furthermore, this study measured the outcome of the use of an immunosuppressive medications to control the disease. The study is a retrospective cohort study that was done in National Guard Hospital in Jeddah during the period from 2017 to 2019 for patients admitted with ILDs of unknown etiology during the period 2012 to 2016 who are Adults (18 years or older) excluding those who have other chronic lung disease, heart failure, or known triggers to the disease. The data of the patients was collected by looking at their medical records (hardcopy). A data extraction sheet was used that included baseline demographics and disease characteristics, used medications, outcome parameters (PFT, CT Chest, Subjective Clinical Improvements) for data interpretation. And Data was analyzed using the software STATA. Results show the use of systemic steroids alone showed clinical improvement in 17% of steroid users and 8% improvement in chest CT. And the addition of immunosuppressive medications showed 33% clinical improvement and 17% chest CT improvement in comparison to those who were not treated with immunosuppressive medications. Concluding that the results were non significant with poor outcome and little improvement.

Introduction:-

Interstitial Lung Diseases (ILD) are a collection of parenchymal lung disorders classified together because of similar clinical, radiographic, physiologic, and pathologic manifestation. The term Interstitial refers to the Interstitium of the

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lung where the abnormality begins, although that term could be misleading [1]. In fact, most of these diseases play a major role in alteration of the alveoli and the airway architecture. Three groups of the disease have been detected: rare, major, and unclassified. For diagnosis, several biomarkers have been proposed to predict the stage and progress of the disease, as early diagnosis is essential for the treatment [2]. There are several ways to control the progression of the disease, but a convenient treatment has not been yet approved.

Epidemiologically, the diseases are widely spread globally whereas it is rarely seen in patients locally [3]. Therefore, there are some studies in the United States of America that discussed different management approaches of these diseases. According to a recent study, sixty-eight percent of the patients responded to the treatment of steroids, while fourteen percent developed sustained diseases [3]. However, the specific dose of the steroids, was lacking in the study. Locally, there are no studies yet that have been conducted due to the rare cases that are present. For these reasons, our study will try to cover the specific doses of steroids as well as the application time of the medications.

To include the specific dose and the time of the application, the information will be gathered from the history of the patients' records.In addition, the use of immunosuppressive medicationscould impact the treatment pathway of the disease, so it will be considered in our information gathering. Radiological and physiological improvements are beneficial to detect the progression of the diseases [4].

Therefore, comparison between patients who were managed through acquiring diverse treatment regimens and patients who depended upon steroid only has a clinical significance that can alter the decision of the best treatment approach to manage patients . So the aim of our research is to look for the most efficient treatment for patients with Interstitial Lung Diseases of Unknown etiology by observing the radiological and physiological improvements.

Methods:-

Study Area :

The study was done in National Guard Hospital in Jeddah during the period from 2017 to 2019 for patients admitted with Interstitial Lung Diseases of Unknown etiology.

Study Subjects:

Inclusions:

1. Patients diagnosed with ILDs of unknown etiology during the period (2012 to 2016)
2. Adults (18 years or older)

Exclusions:

1. Patients with other chronic lung disease
2. Patients with heart failure
3. Patients less than 18 years
4. Patients with known trigger to ILDs

Study Design:

Retrospective Cohort Study

Sample Size:

Estimated sample size was total 30 subjects, and considering alpha of 0.05 and power of 80%

Sample Technique:

Non probability convenient sampling

Data Collection Method:

The data was collected by looking at the patients' medical records (hardcopy).

A data extraction sheet was used that included baseline demographics and disease characteristics, used medications, outcome parameters (PFT, CT Chest, Subjective Clinical Improvements) for data interpretation.

Data Analysis:

1. Data was analyzed using the software STATA.

2. Mean and proportion was measured for descriptive analysis.
3. Comparison was estimated using student t-test for continuous variables, and chi square for categorical variables.
4. P-value of 0.05 was used for statistical significance.

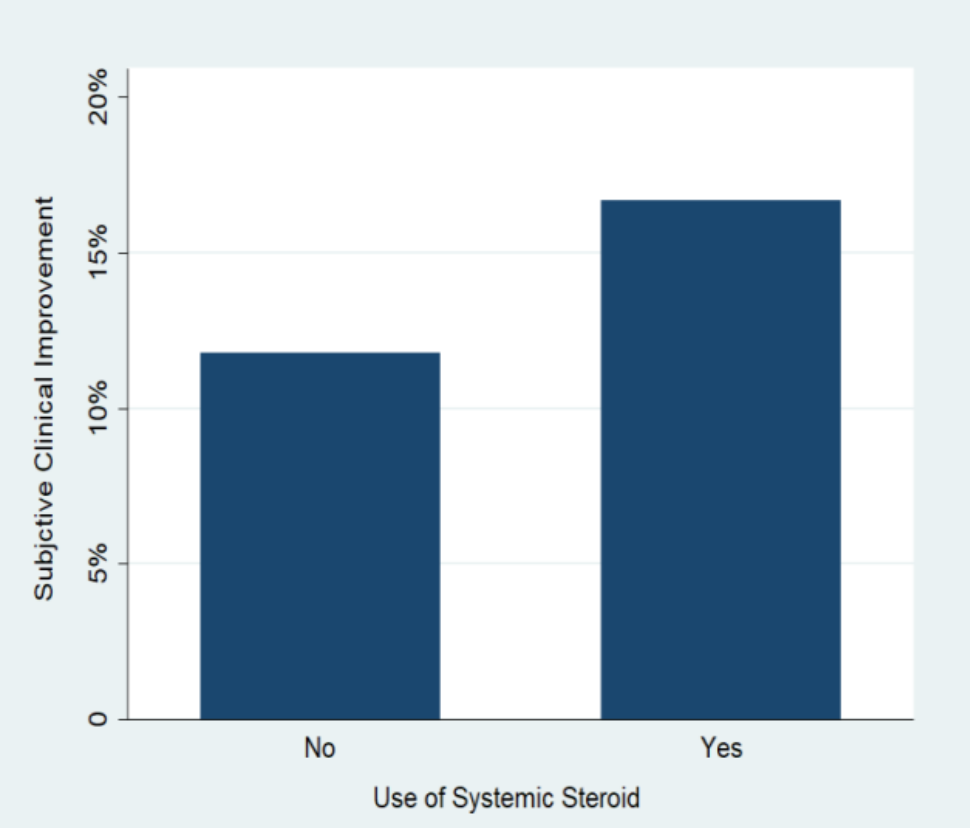
Results:-

In a retrospective chart review a total of 30 adults (18 years or above) with a mean age of 64 and a mean BMI of 29. The majority of the subjects were females (29) (96.7%) and 1 male (3.3%). Among them all only one was smoker (3.33%). The presence of comorbidities including hypertension in (70%), Diabetes (56%), kidney disease (13%) and liver disease (7%). The parameters are considered as a subjective clinical improvement based on the full pulmonary function test during follow up or as a radiological improvement in a chest CT scan during follow up.

The outcome of these parameters is observed with the use of systemic steroids or the use of both systemic steroids and immunosuppressive medications. Out of 30 subjects 12 (40%) used steroids alone, and 7 (23%) used immunosuppressive medications in addition to the steroids.

The use of systemic steroids alone showed clinical improvement in 17% of steroid users and 8% improvement in chest CT (Table 1). On the other hand, the addition of immunosuppressive medications showed 33% clinical improvement and 17% chest CT improvement in comparison to those who were not treated with immunosuppressive medications (Table 2).

Table 1:-



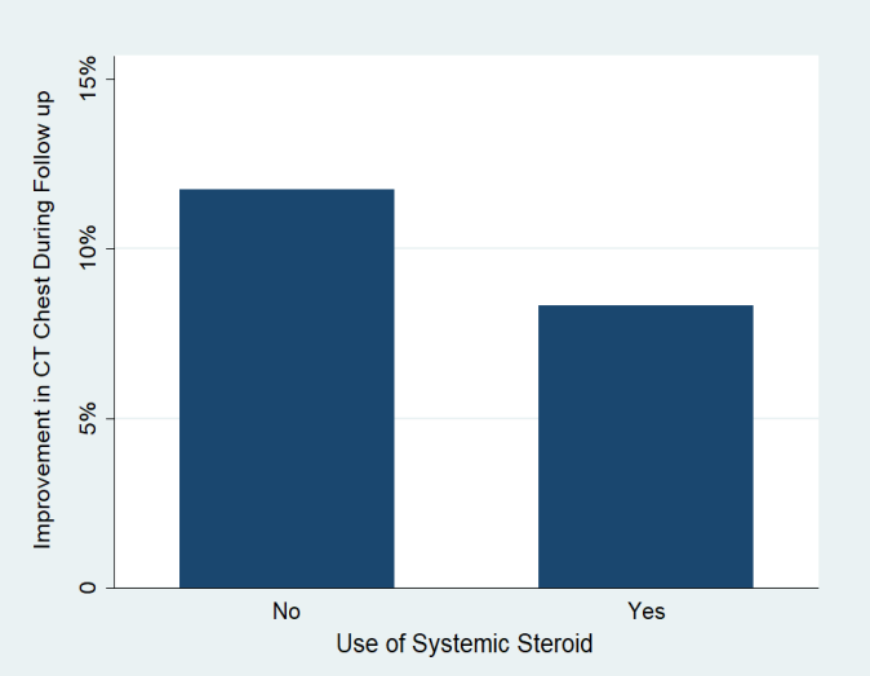
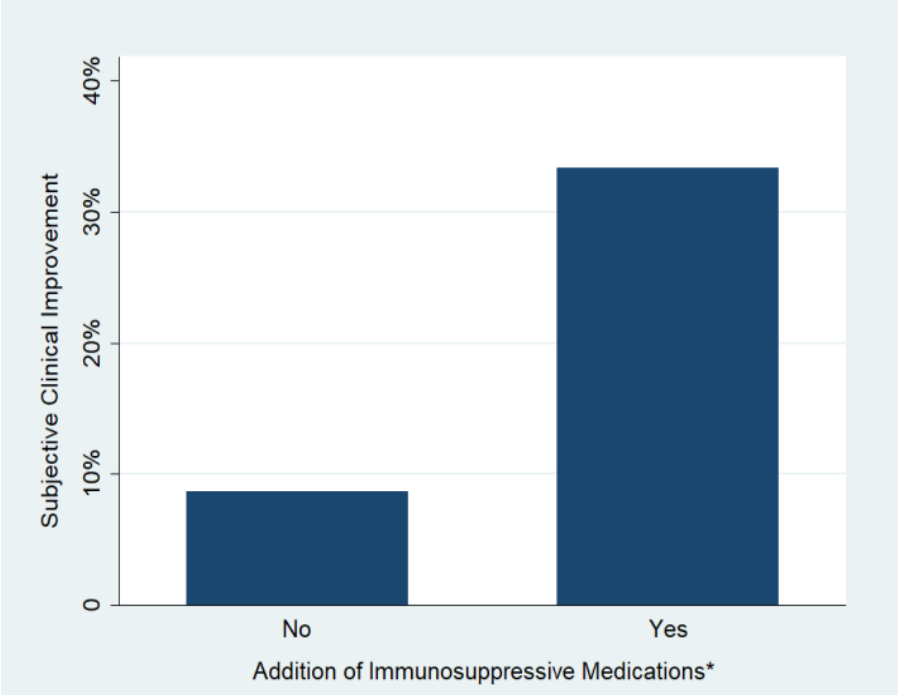
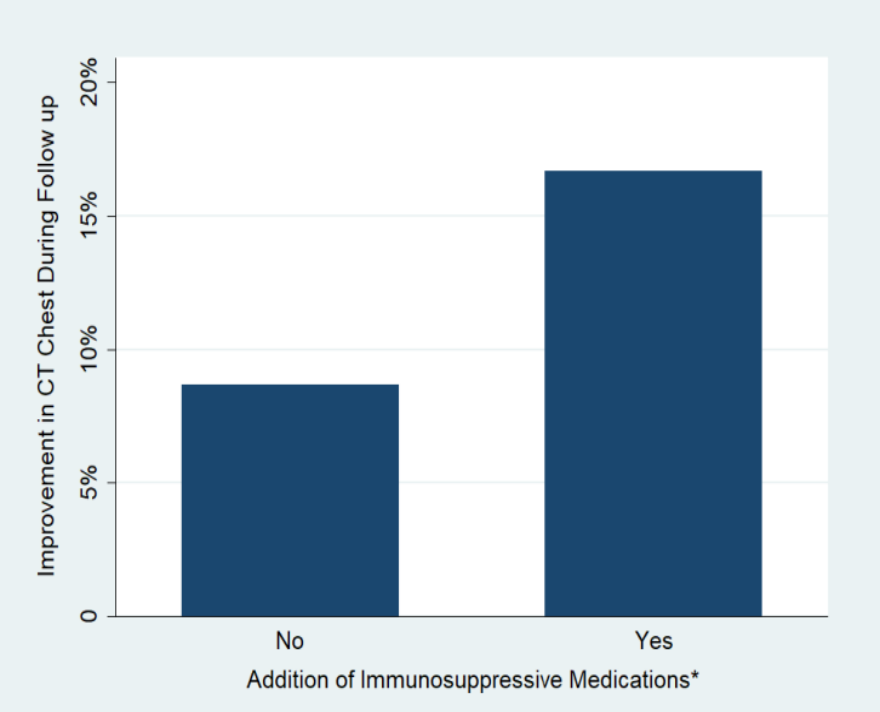

Improvement in CT Chest During Follow up
0
5%
10%
15%
No
Yes
Use of Systemic Steroid

Table 2:-


Subjective Clinical Improvement
0
10%
20%
30%
40%
No
Yes
Addition of Immunosuppressive Medications*



Discussion:-

The results for the use of systemic steroids showed a low percentage improvements clinically and radiologicaly, but in comparison to those who did not use systemic steroids there was a relative better outcome clinically.

As for the addition of immunosuppressive medications, also a low percentage improvement is seen clinically and radiologicaly, but a relatively better outcome in both clinical and radiological parameters compared to those who were not treated with immunosuppressive medications.

Limitations:

1. Difficulty interpreting data using a hard copy of retrospective charts with mostly inconclusive history.
2. Limited number of subjects
3. Missing data

Conclusion:-

Non significant results with poor outcome and little improvement, but a relative better findings with the addition of immunosuppressive medications. The results for the use of systemic steroids showed a low percentage improvements clinically and radiologicaly, but in comparison to those who did not use systemic steroids there was a relative better outcome clinically. As for the addition of immunosuppressive medications, also a low percentage improvement is seen clinically and radiologicaly, but a relatively better outcome in both clinical and radiological parameters compared to those who were not treated with immunosuppressive medications.

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2. Medical records center
3. Co investigators
4. Data collectors

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