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DESCRIBE OUTCOMES OF UNDERLYING MUSCULOSKELETAL DISEASES AND RHEUMATIC WITH COVID-19 OF CHILDREN IN IRAQ.

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Abstract:
This paper aims to describe outcomes of underlying musculoskeletal diseases and rheumatic with COVID-19 of children in Iraq.
A retrospective study was conducted in different hospitals in Iraq for the period from 2-7-2020. To 9-6-2021, when 600 children were included in this study, they were distributed into two groups: Not hospitalised for 550 patients with 91.6% and hospitalised for 50 patients with 8.33%
600 CYP with RMDs <19 years old from Iraq with SARS-CoV- 2 infection were included, the majority with juvenile idiopathic arthritis for 300(50%) in group Not hospitalised and 33(5.5%) of group Hospitalised.
seven of these patients died Compared with JIA, and the diagnosis of systemic lupus erythematosus distributed to 5 boys and two girl's patients

Keywords: SARS-CoV- 2, JIA, Hospitalised, pediatric, arthritis.

INTRODUCTION

The outbreak of the novel coronavirus COVID-19 is considered by the international community to be an emergency of international importance. Besides of enormous social significance, the COVID-19 pandemic has shed light on a number of fundamentally new clinical and fundamental problems in the immunopathology of human diseases [1,2,3]. This problem is extremely important for patients with of rheumatic diseases due to their high susceptibility to complications. Achieving and maintaining control of IVRI activity plays an important role in reducing the incidence of co-infection in these patients [4,5,6].

The clinical outcome of infection with the new coronavirus (COVID-19) is characterized by an exceptional diversity of manifestations, which depends on many factors, one of which is the age of the patient, and the most severe manifestations that threaten life in children is a severe acute respiratory syndrome (SARS-CoV-2) [7,8], accompanied in some cases by the development of multiple organ failure during the first two or three months of the COVID-19 pandemic and the opinion of the global medical community has been that this disease in children is usually mild and not fatal[9,10].

The presence of multisystem inflammatory syndrome in children is time-related to SARS-CoV-2, which can lead to serious consequences [11,12].

And by relying on recent studies similar to mine, it was found that the data of Haifa occurred in children up to the age of 15 years and associated with rheumatic diseases, and the death rate was revealed, which was 0.48%. It was also noted that there was an increased risk of entering Children admitted to the hospital for critical care [13,14]

Data from one analysis of adults with rheumatic and musculoskeletal diseases (RMDs) have shown that the presence of rheumatoid arthritis, lupus, or psoriasis (as a group) is associated with increased
risk of COVID-19- related death compared with those without comorbid RMDs However, this analysis did not account for the effects of treatments or disease activity. [15,16]

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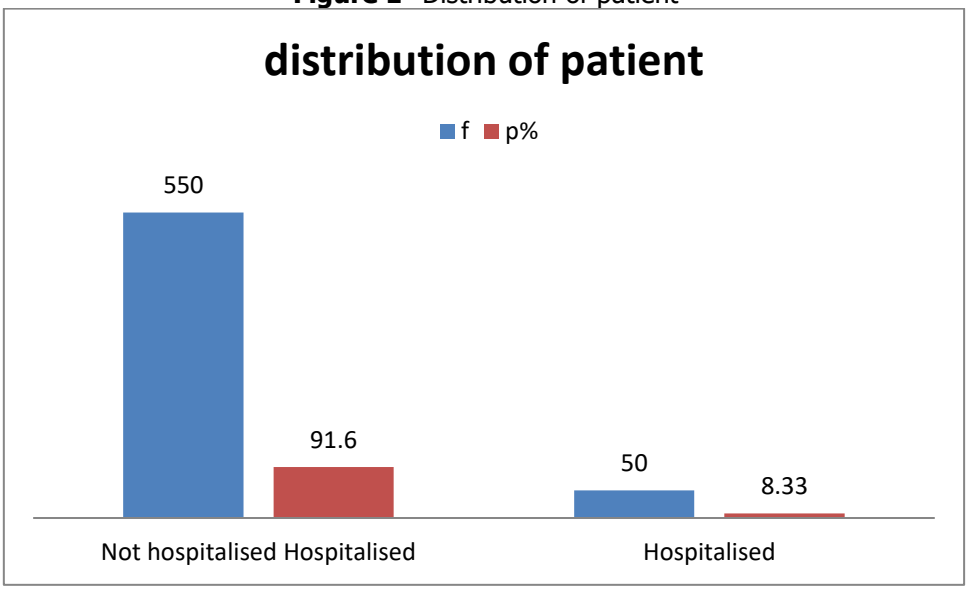
MATERIAL AND METHOD

Patient sample

A retrospective study was conducted in different hospitals in Iraq for the period from 2-7-2020. To 9-6-2021, when 600 children were included in this study, they were distributed into two groups: Not hospitalised for 550 patients with 91.6% and hospitalised for 50 patients with 8.33%.

Figure 1- Distribution of patient



STUDY DESIGN

In this retrospective analysis, 600 pediatric patients were included. It was divided into two groups; the first group included 550 patients (350 boys with 58.3% and 200 girls with 33.3%)

Where all the data was entered by relying on a doctor specializing in rheumatology, and the report was not provided directly to the patients. In addition, data and demographic information about the disease were collected and managed through the use of REDCap.

My social group was only patients with rhythmic movement disorders who tested positive for COVID-19.

In addition, the age of children does not exceed 16 years. Children over 16 years of age are excluded, primary RMD diagnosis, RMD disease activity (tick box: remission, low, moderate, high, or unknown), RMD treatments including glucocorticoid use, and which disease-modifying anti-rheumatic drug (DMARD)and the criteria for use also included children with juvenile idiopathic arthritis

STUDY PERIOD

After obtaining the necessary licenses and requirements from the competent committees to collect patients, the study period was a full year for collecting primary and secondary data from 2-7-2020 To 9-6-2021

AIM OF STUDY

This paper aims to describe outcomes of underlying musculoskeletal diseases and rheumatic with COVID-19 of children in Iraq.

RESULTS

Table 1- Demographic characteristics of the primary outcomes for patients N=600

VARIABLE	Not hospitalised N= 550	Hospitalised N= 50
Age		
5-9	200	10
10 – 15	350	40
SEX		
Boys	350 (58.3%)	30 (5%)
Girls	200 (33.3%)	20 (3.33%)
Primary rheumatology diagnoses		
JIA	300 (50%)	33 (5.5%)

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Polyarticular	57 (9.5%)	5 (0.8%)
Systemic	100 (16.6%)	4 (0.6%)
ERA	44 (7.3%)	4 (0.6%)
Other	49 (8.16)	4 (0.6%)
comorbidities		
Hypertension	100 (16.6%)	10 (1.6%)
diabetes	200 (33.3%)	20 (3.3%)
asthma	150 (25%)	12 (2%)
obesity	66 (11%)	5 (0.8%)
Others	34 (5.6%)	3 (0.5%)

Figure 2- P-value of Demographic characteristics of the primary outcomes for patients N=600

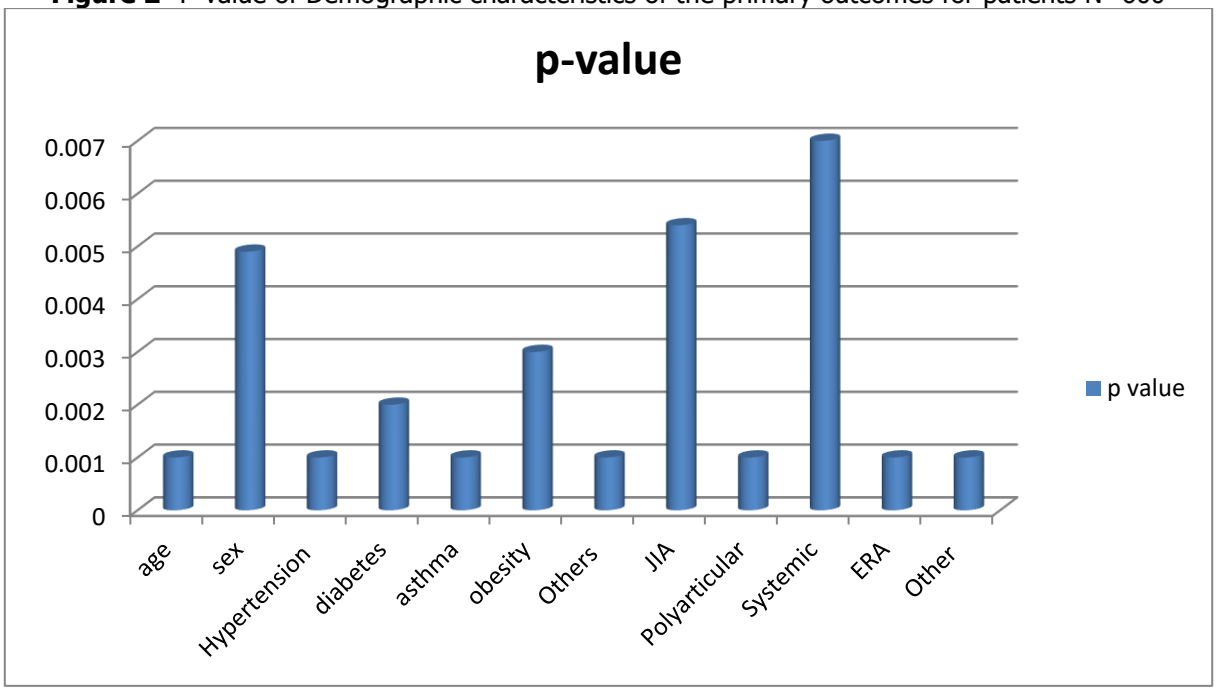

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Table 2- Distribution of patients according to COVID-19 diagnosis

COVID-19 diagnosis	Frequency	P%
Via RT-PCR (nasal swab) positivity	300	50
Via antibody testing positivity	260	43.3
Via contact history	40	6.6

Table 3- Distribution of patients according to Concomitant systemic treatment

	G1	G2	P VALUE
Colchicine	188	12	<0.001
Methotrexate	132	10	0.0099
Etanercept	110	6	0.005
Any csDMARD	80	7	0.066
Infliximab	20	4	0.04
IL-6 inhibitor	15	6	0.08
Rituximab	5	5	0.000

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Table 4- Clinical manifestations of the patient

	Not hospitalised N= 550	Hospitalised N= 50	P VALUE
Fatigue	330	40	<0.001
Rhinorrhoea	234	15	0.008
Gastrointestinal manifestations	98	29	0.06
Anosmia	122	18	0.0021
Cough and/or respiratory distress	250	33	<0.001
Mucocutaneous involvement	44	3	0.05

Table 5- outcomes final related to time from covid-19 onset to death

age	Sex	Rheumatology treatment	Death T
Patient number 1	M	Any csDMARD	6th day
Patient number2	M	Methotrexate	7th day
Patient number 3	F	Infliximab	10th day
Patient number 4	M	IL-6 inhibitor	9th day
Patient number 5	F	Infliximab IL-6 inhibitor	7th day
Patient number 6	M	Infliximab	7th day
Patient number 7	M	Infliximab	8th day

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Figure 3- Rate from COVID-19 onset to death (th day)

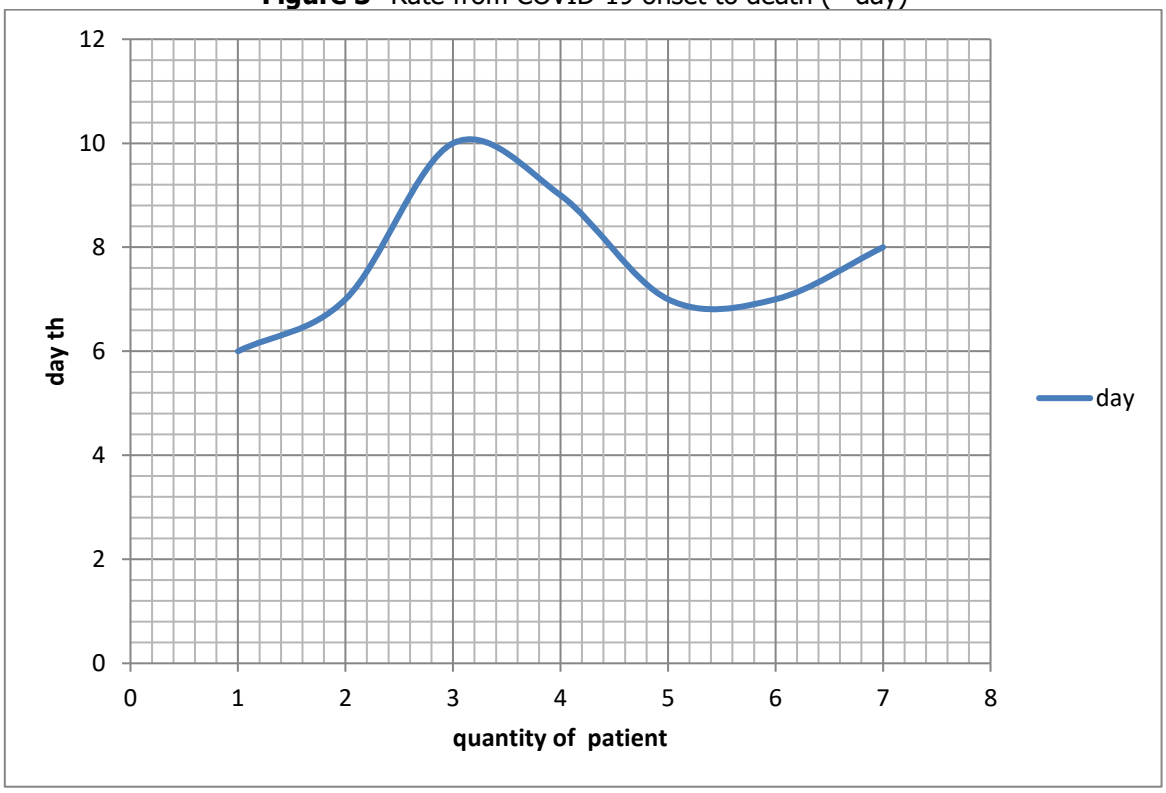
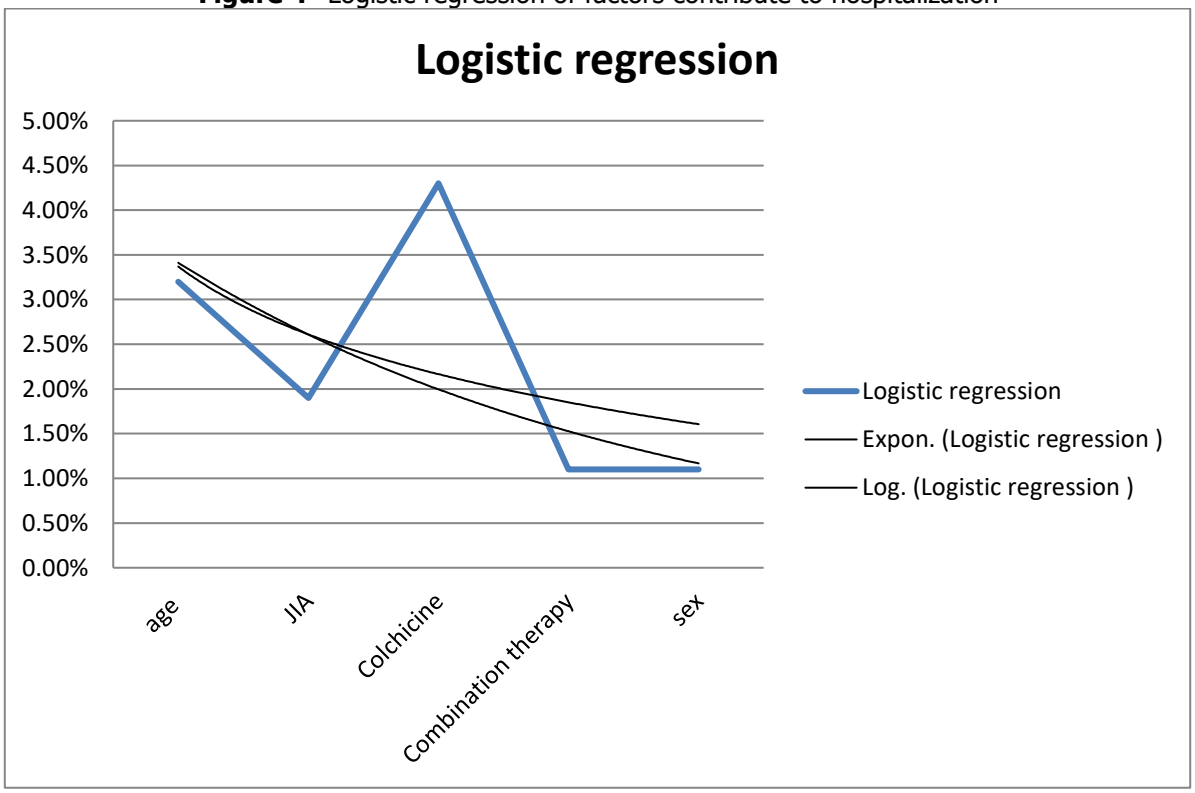


Figure 4- Logistic regression of factors contribute to hospitalization



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DISCUSSION

Six hundred patients were included and distributed into two groups, wherein the not hospitalised group included 550 patients with 61 % and the hospitalised group with 50 patients. The patients were distributed according to ages (5-9 years for 200 patients with 33.33 %) and from (10-15 years old) As for Hospitalised, the patients were distributed according to ages (5-9 years for ten patients with 1.6%) and (10-15 years for 40 patients with 6.6%), and they were Patients' boys were more prevalent in this study compared to girls in relation to the two groups, where the patients were distributed according to gender (boys of patients for 350 patients with 58.3% and girls for 200 patients with 33.33 %), and the same is the case with regard to the group Hospitalised (boys for 30 patients with 5% of patients, and daughters of patients in 20 patients, with 3.3% of patients).

Primary rheumatic diseases were diagnosed. The most common prevalence for the Not hospitalised group was JIA for 300 patients with 50%, followed by Polyarticular for 57 patients with 9.5%, and for the Not hospitalised group was five patients with 0.8%, followed by Systemic for the Hospitalised group for 100 Patient with 16.6% and ERA 44 (7.3%) for the Hospitalised group and four patients (0.6%) for the Hospitalised group.

The comorbidities were more developed in boys than in girls, and the most common comorbidities were diabetes in 200 patients with (33.3%) and hypertension in 100 patients with 16.6%, in addition to asthma for 150 patients with 25%. There is a statistically significant relationship between the parameters at a P-value of 0.001

The distribution of patients according to COVID-19 diagnosis was greater Via RT-PCR (nasal swab) positivity for 300 patients with 50% and via antibody testing positivity for 260 patients with 43.3%, as shown in Table 2

children with SLE/MCTD, vasculitis, other RMDs, or autoinflammatory syndromes were more likely to be hospitalised compared with those with JIA. As in multiple other reports in non-disease-specific populations, obesity represented a risk factor for more severe COVID-19 outcome. These initial results are reassuring against the occurrence of severe COVID-19 illness (excluding multisystem inflammatory syndrome in children (MIS-C)) in the majority of individuals with pediatric RMDs, with only 1-in children and young people with RMDs with COVID-19 reporting hospitalisation.

Although the incidence of COVID-19 in JIA patients is unknown, the frequency of infections tends to increase in these patients. Previous studies reported that there were both antirheumatic drugs and the disease might increase susceptibility prone to infections in patients with JIA However, some reports in adult patients with rheumatic diseases showed that the use of anti-tumor necrosis factor (TNF) had a protective effect on the evolution of severe forms.22,23 In a report, a case with mild symptoms who used anti-IL-1 blockers during the COVID-19 pandemic was presented.24 However, a study done in China found that rheumatic patients infected with COVID-19 might present with more severe symptoms compared with non-rheumatic patients. In the current approach guideline, pediatric rheumatic diseases and rheumatic drugs do not pose an increased risk for COVID-19, glucocorticoid therapy can be modified in case of infection, and existing bDMARD treatments should not be discontinued

CONCLUSION

Currently, the infection caused by COVID-19 is considered by the international community as an emergency of global importance. Rheumatologists are particularly interested in this problem since patients with inflammatory rheumatic diseases are at increased risk of developing infectious diseases and are treated with immunosuppressive drugs and the use of disease-modifying anti-inflammatory drugs and genetically modified biological agents increases the incidence of serious infections.

The article presents current data and Describe outcomes of underlying musculoskeletal diseases and rheumatic with COVID-19 of Iraqi children.

RECOMMENDATION

The latest evidence shows that although children are infected with Coronavirus, few of them develop severe infection with this disease, and there is no evidence so far that a child with the rheumatic disease is more susceptible than others to infection with CO19. However, children who take steroid medications or biological injections may be more likely to contract any viral illness.

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