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Nicdao, IKJ, Garcia, RDJ. A Comparative Analysis on the Clinical Profile, Laboratory Profile, Treatment and Outcome of Kawasaki Disease vs Multisystem Inflammatory Syndrome in Children (MIS-C) among Pediatric Patients in a Tertiary Hospital – A Retrospective Cohort Study
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ORIGINAL ARTICLE

A COMPARATIVE ANALYSIS ON THE CLINICAL PROFILE, LABORATORY PROFILE, TREATMENT AND OUTCOME OF KAWASAKI DISEASE VS MULTISYSTEM INFLAMMATORY SYNDROME IN CHILDREN (MIS-C) AMONG PEDIATRIC PATIENTS IN A TERTIARY HOSPITAL – A RETROSPECTIVE COHORT STUDY

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ABSTRACT

Introduction: Kawasaki Disease (KD) and Multisystem Inflammatory Syndrome in Children (MIS-C) are two related conditions that primarily affect pediatric patients. The overlap in clinical symptoms, physical findings, and laboratory results between MIS-C and KD complicates diagnosis and treatment, as children with MIS-C may fulfill the criteria for KD. Early recognition of distinguishing clinical, laboratory, and echocardiographic findings is crucial for timely diagnosis and appropriate treatment, which can mitigate the risk of severe cardiovascular, gastrointestinal, and neurological complications.

Objective: This study aims to compare the clinical profile, laboratory profile, 2-D echocardiographic findings, treatment, and outcome of children with KD vs MIS-C at a tertiary hospital in the Philippines.

Method: A retrospective, analytic cohort study was done to differentiate the clinical profiles, laboratory profile, treatments, and outcomes of pediatric patients aged less than 19 years old, admitted with a diagnosis of KD, from January 2016 to December 2019 (pre-COVID-19 pandemic), and MIS-C cases admitted from January 2020 to December 2023, in a private, urban, tertiary hospital. Descriptive statistics (frequency and proportion, mean and standard deviation, median and inter-quartile range) were used to summarize the general and clinical characteristics of the participants. Independent T-test, Mann-Whitney U test and Fisher's Exact/Chi-square test were used to determine the difference of mean, median and frequency of laboratory parameters among groups.

Results: The study included 87 patients, with 60 categorized in the KD group (13 diagnosed with complete KD and 47 with incomplete KD) and 27 in the MIS-C group. MIS-C patients were more likely to be older ($p = 0.023$), present with GI symptoms such as vomiting (48.2% in MIS-C vs. 12.8% in KD) and abdominal pain (40.7% vs. 6.4%), respiratory symptoms such as shortness of breath (29.6% vs 0%) and wheezing (14.8% vs 0%), have lower WBC (6.30 in MIS-C vs. 13.07 in complete KD and 10.18 in incomplete KD, $p < 0.001$), ANC (5,940 in MIS-C vs. 13,660 in complete KD and 10,432 in incomplete KD, $p = 0.002$), and platelet count (280 in MIS-C vs. 368 in complete KD and 364 in incomplete KD, $p = 0.13$), and experience more complications such as myocarditis (14.81% vs. 0%), hypotension (18.52% vs. 0%), shock (14.81% vs. 0%), and pneumonia (40.74% vs. 17.02% for incomplete KD and 7.69% for complete KD). In contrast, key features of KD, including conjunctival injection (100% in KD vs. 25.9% in MIS-C), rash (100% vs 59.3%), oral changes (92.3% vs. 22.2%), and cervical lymphadenopathy (92.3% vs. 29.6%), elevated laboratory results of CRP (12.89 in MIS-C vs. 46.53 in complete KD and 111.15 in incomplete KD, $p < 0.001$), ESR (41.91 in MIS-C vs. 61.73 in complete KD and 82.49 in incomplete KD, $p = 0.003$), and AST/ALT ratios (0.42 in MIS-C vs. 1.88 in complete KD and 0.62 in incomplete KD, $p = 0.034$) were more frequently observed in KD patients. Combination therapy involving intravenous immunoglobulin (IVIG), methylprednisolone, and acetylsalicylic acid (ASA) was more common in MIS-C patients than in KD patients (48.15% in MIS-C vs. 7.69% for complete KD and 2.13% for incomplete KD), who mainly received IVIG and ASA alone (84.62% in complete KD and 93.62% in incomplete KD vs 3.7% in MIS-C).

Conclusions: This study highlights key clinical and laboratory differences between MIS-C and KD in a private tertiary hospital setting. MIS-C patients were generally older, exhibited more GI and respiratory symptoms, and had a higher risk of serious complications. In contrast, KD cases more often presented with classic mucocutaneous signs and elevated inflammatory markers. These findings underscore the importance of early differentiation, as MIS-C often requires more intensive management. The study also identifies practical diagnostic indicators including CBC parameters such as WBC, ANC, and platelet count that may aid clinicians, particularly in resource-limited settings. Further multicenter research involving both public and private hospitals is needed to validate and enhance the diagnostic criteria.

KEYWORDS: *Kawasaki Disease, Multisystem Inflammatory Syndrome in Children, COVID-19*

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The authors declare that the data presented are original material and have not been previously published, accepted or considered for publication elsewhere; that the manuscript has been approved by all authors, and that the authors have met the requirements for authorship.

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INTRODUCTION

Kawasaki Disease (KD) and Multisystem Inflammatory Syndrome in Children (MIS-C) are two distinct, yet interrelated, pediatric inflammatory conditions that primarily affect children. KD is an acute febrile vasculitis with a predilection for the coronary arteries, commonly occurring in children under five years of age.[1] In contrast, MIS-C is a post-infectious hyperinflammatory syndrome that typically develops following exposure to SARS-CoV-2.[2] Although KD and MIS-C are separate disease entities, they share overlapping clinical and laboratory features, which can complicate timely diagnosis and treatment.

The emergence of MIS-C during the COVID-19 pandemic has heightened awareness of this diagnostic overlap. Both conditions can present with persistent fever, mucocutaneous symptoms, rash, conjunctival injection, gastrointestinal manifestations, and cardiac involvement. As such, differentiating between KD and MIS-C poses a significant clinical challenge. Despite the availability of established diagnostic criteria such as those provided by the American Heart Association (AHA) for KD, and the Centers for Disease Control and Prevention (CDC) and World Health Organization (WHO) for MIS-C, these guidelines have limitations. In many cases, children with MIS-C may fulfill the diagnostic criteria for KD, leading to ambiguity in clinical decision-making. This issue is especially pronounced in resource-limited settings, where access to advanced diagnostics may be constrained. Hence, identifying reliable, low-cost laboratory markers that can distinguish between the two conditions is critical.

In the Philippines, data on the incidence and clinical profile of both KD and MIS-C are limited. According to Seposo et al. (2024), the incidence rate of KD in the Philippines ranges from 14.98 to 23.20 cases per 100,000 population.[3] In the United States, the incidence of KD is thought to be 25 in 100,000 in patients ages 0 to 5 years. In Japan, the incidence is approximately 243.1 per 100,000 in patients ages 0 to 5 years.[4] Meanwhile, MIS-C remains a relatively new clinical entity, with local and global incidence estimates suggesting it occurs in approximately 0.6-0.7% of pediatric COVID-19 cases.[5,6]

Several international studies have attempted to delineate the differences between KD and MIS-C using detailed clinical assessments, laboratory investigations, and imaging studies. However, the relevance of these findings in low- and middle-income countries like the Philippines may be limited by differences in healthcare access and diagnostic capacity. Furthermore, there is a gap in literature regarding how these two conditions can be differentiated using accessible and cost-effective laboratory tests in the local setting.

This retrospective, analytic cohort study aims to provide a comparative analysis of the clinical and laboratory profiles, treatment strategies, and outcomes of pediatric patients diagnosed with KD and MIS-C in a private tertiary hospital in the Philippines. By identifying key distinguishing features based on simple and affordable diagnostic tools, this study seeks to improve early recognition, enhance treatment decision-making, and help reduce the risk of serious cardiovascular, gastrointestinal, and neurologic sequelae in affected children.

Objectives

a) General: This study aimed to compare the clinical profile, laboratory profile, treatment, and outcome of children with KD vs those with MIS-C

b) Specific:

1. To describe the demographic and clinical profile of pediatric patients diagnosed with KD and MIS-C (age, gender, family history)
2. To describe the laboratory profile of pediatric patients diagnosed with KD and MIS-C, in terms of hemoglobin, hematocrit, white blood cell count (WBC), lymphocyte count, absolute lymphocyte count (ALC), platelet count, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), sodium, albumin, alanine aminotransferase (ALT) and aspartate aminotransferase (AST)
3. To compare the demographic and clinical profile of pediatric patients diagnosed with KD and MIS-C
4. To determine significant differences in laboratory parameters (hemoglobin, hematocrit, WBC, lymphocyte count, ALC, platelet count, CRP, ESR, sodium, albumin, ALT, AST) between pediatric patients diagnosed with KD and MIS-C

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5. To compare the 2-D Echocardiographic (2-DE) findings between pediatric patients diagnosed with KD and MIS-C
6. To examine the different treatment modalities and associated outcome for pediatric patients diagnosed with KD and MIS-C

METHODOLOGY

Study design and setting

This was a retrospective, analytic cohort study involving pediatric patients less than 19 years old, admitted with a diagnosis of KD vs MIS-C in a private, urban tertiary hospital. The research investigated pediatric patients aged less than 19 years old with a diagnosis of KD admitted from January 2016 to December 2019 (pre-COVID-19 pandemic), and MIS-C cases admitted from January 2020 to December 2023, in a private, urban, tertiary hospital.

Sample size

The sample size was computed using G* Power 3.1.9.7. The computations done were based on comparison of quantitative variables (i.e., age, laboratory findings) and qualitative variables between the two groups (MIS-C vs KD). This was done since there are multiple variables to be compared between the two groups. Parameters used and computed sample size were summarized in the table below. Since the comparison of quantitative variables require more patients, this was considered. Thus, this study required a minimum sample size of 128, with each group having 64 patients each.

Sample size computation based on:	Parameters used:	Computed Sample Size at 0.05 level of significance
Comparison of quantitative variable (i. e. age, laboratory findings) between two groups (MIS-C vs Kawasaki)	• Assumed Effect size: **0.5** • Allocation Ratio N2/N1: **1** • Power: **80%**	128
Comparison of qualitative variables between two groups (MIS-C vs Kawasaki) ***Assuming a 2x2 table**	• Assumed Effect size: **0.3** • Degrees of freedom (DF): (R-1)*(C-1)= (2-1)(2-1) = **1** • Power: **80%**	88

The total number of MIS-C cases from January 2020 to December 2023 was limited to around 30 patients only, while the KD group had enough samples desired. Thus, the sampling design was modified to a randomization ratio of 1:2. For instance, in examining age as a significant factor, for every single 2-year-old patient with MIS-C, two 2-year-old patients with KD were included. Similarly, for every three 5-year-old MIS-C patients, six 5-year-old KD patients were matched. This approach was done to ensure a balanced and representative comparison across age groups. Matching was performed by the primary investigator who was unblinded to the diagnosis of the patients.

For the MIS-C group, total enumeration of all cases admitted from January 2020 to December 2023 was done. For the KD group, stratified random sampling of all cases admitted from January 2016 to December 2019 (pre-COVID-19 pandemic) was done, in a 1: 2 ratio (MIS-C:KD) ratio, as previously discussed.

Inclusion criteria

All hospitalized patients aged under 19 years old and diagnosed with complete or incomplete KD and MIS-C were included in the study. KD inclusion criteria were according to the American Heart Association guidelines.[7] This is defined as a case with persistent fever for at least five days, associated with at least four of the five following criteria: bilateral bulbar conjunctival injection without exudate, unilateral cervical lymphadenopathy measuring ≥ 1.5 cm diameter, polymorphous skin rash, oral mucosal changes (erythema and cracking of lips, strawberry tongue, and/or erythema of oral and pharyngeal mucosa), and erythema and edema of the hands and/or feet in the acute phase and/or periungual desquamation in the subacute phase. Children who do not meet the required KD criteria, such as those with fever ≥ 5 days plus only two or three compatible, above-mentioned clinical criteria, or those with fever ≥ 7 days with no other explanation, and with 2-DE findings compatible with KD, were accepted as incomplete/atypical KD cases. In addition, laboratory and 2-DE findings were considered supportive for diagnosis.[7]

MIS-C inclusion criteria were according to the definition of the 2023 CDC guidelines. According to these guidelines, inclusion criteria of MIS-C were children under 21 years of age with subjective or documented fever (temperature ≥ 38.0^{o}C); with a clinical severity requiring hospitalization or resulting in death; with evidence of systemic inflammation, indicated by a CRP ≥ 3.0 mg/dL (30 mg/L), and new-onset manifestations in at least two or more organ systems affected (cardiac, mucocutaneous, shock, gastrointestinal, hematologic). In addition, it should meet laboratory criteria for SARS-CoV-

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2 infection or epidemiologic linkage criteria (detection of SARS-CoV-2 RNA or specific antigen in a clinical specimen up to 60 days prior to or during hospitalization, or in a post-mortem specimen; or detection of SARS-CoV-2 specific antibodies in serum, plasma, or whole blood, associated with current illness resulting in or during hospitalization).[8]

Exclusion criteria

Patients for whom another diagnosis was confirmed during the follow-up were excluded, unless the evaluation indicated that the other illness(es) was/were coincidental co-illnesses (e.g., dengue fever), or complications (e.g., hospital-acquired bacteremia due to an intra-vascular line).

Operational Definition of Terms

Operational Terms	Definition
Clinical Profile	Age, gender, symptomatology, laboratory findings, 2-DE findings in patients with KD vs MIS-C
Laboratory Profile	Laboratory results of patients with KD or MIS-C which include hemoglobin, hematocrit, white blood cell count (WBC), lymphocyte count, absolute lymphocyte count (ALC), absolute neutrophil count (ANC), platelet count, C-reactive protein (CRP), erythrocyte sedimentation rate (ESR), sodium, albumin, alanine aminotransferase (ALT), aspartate aminotransferase (AST)
Treatment	Strategies used to treat KD or MIS-C, which include intravenous immunoglobulin (IVIG), methylprednisolone or dexamethasone, acetylsalicylic acid (ASA), enoxaparin, tocilizumab, antibacterial, anti-fungal agents, fluid boluses, vasopressors, oxygen by mask, nasal cannula, or continuous positive airway pressure (CPAP), mechanical ventilation, and blood transfusions (packed red blood cells and/or platelets)
Complications	Includes myocarditis, hypotension, shock, secondary bacteremia, candidemia, pneumonia, ARDS, acute kidney injury, hepatitis
Outcome	The length of fever before and after treatment, length of hospital stay, recurrence of illness, additional treatment required, death
Cytokine Storm	Presence of high fever, inflammation (redness and swelling), and severe fatigue and nausea as a result of severe immune reaction in which the body releases too many cytokines into the blood too quickly, with a documented elevation of serum interleukin-6 (IL-6) level

Data gathering

The list of all patients who fulfilled the inclusion criteria was retrieved. This list was generated from the database of all pediatric patients who had KD from January 2016 to December 2019, and all pediatric patients who had MIS-C from January 2020 to December 2023. Data was gathered by retrieving the medical charts from the electronic medical record (EMR) system and Archive One database (document management system). The following data were collected: age, gender, family history, symptomatology, clinical findings based on system involvement, hemoglobin, hematocrit, WBC, lymphocyte count, ANC, ALC, platelet count, CRP, ESR, sodium, albumin, ALT, AST, Dengue NS1, Dengue IgM, Dengue IgG, 2-DE findings, treatment provided, oxygen support, blood transfusion, length of fever after treatment, length of hospital stay, recurrence of illness, and associated complications. These laboratory parameters were selected based on their availability in routine clinical practice, particularly in low-resource settings and low- to middle-income countries such as the Philippines. Selection was also guided by tests commonly performed for both MIS-C and KD, rather than those specific to MIS-C alone such as comprehensive inflammatory marker panels that may not be routinely accessible.

Patient information was kept in a secure office, with access available only to members of the research team. Computerized study information was stored in a secure network with password access. All identifiable information and data were matched with code numbers. A master list linking the code numbers and subject identities was kept separately from the research data. Only members of the research team had access to the list. The research records will be stored for at least five years following completion of the study. Individually identifiable research data were not shared with others outside of the research and analysis team. The investigator and all key personnel completed the Good Clinical Practice (GCP) training on the responsible conduct of research with human data.

Statistical analysis

Descriptive statistics were used to summarize the general and clinical characteristics of the participants. Frequency and proportion were used for categorical variables (nominal/ordinal), mean and standard deviation for normally distributed interval/ratio variables, and median and inter-quartile range for non-normally distributed interval/ratio variables. Shapiro-Wilk test was used to determine normally distributed interval/ratio variables.

Independent T-test, Mann-Whitney U test and Fisher's Exact/Chi-square test were used to determine the difference of mean, median and frequency between groups, respectively.

All valid data were included in the analysis. Missing variables were neither replaced nor estimated. The null hypothesis was rejected at 0.05α-level of significance. R 4.2.2 was used for data analysis.

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Ethical considerations

This study was a retrospective chart review with no direct patient involvement. All data were collected solely by the researcher from medical records of pediatric patients diagnosed with KD or MIS-C at a private tertiary hospital. To ensure confidentiality, all personal identifiers were removed, and the data were anonymized prior to analysis. As this was a retrospective review of existing medical records, patients or their guardians were not informed individually about the study or its potential use for research purposes. The study protocol was reviewed and approved by the hospital's Institutional Review Board (IRB). The study complied with the ethical principles outlined in the Declaration of Helsinki, the International Conference on Harmonization-Good Clinical Practice (ICH-GCP) guidelines, the World Health Organization (WHO) ethical standards, the National Ethics Guidelines for Health and Health-Related Research in the Philippines, and the Data Privacy Act of 2012.

Conflicts of Interest and Funding

The principal investigators and co-investigators declared no potential conflicts of interest or financial disclosures that could affect the study's integrity. No external funding or study grants were obtained for this research, ensuring its independence from any financial influences.

RESULTS

A total of 66 patient records with KD were extracted, but 6 were excluded for the following reasons: not given standard KD treatment (n=4), and final diagnosis was other than KD – streptococcal infection, acute pyelonephritis (n=2). A total of 28 patient records with MIS-C were extracted, but 1 was excluded because the chart could not be accessed or found via EMR and Archive One. A total of 87 patients were analyzed, with 60 patients under the KD group and 27 patients under the MIS-C group.

The total number of cases did not reach the desired sample size of 128. However, the 27 MIS-C cases were the total population of MIS-C patients admitted from January 2020 to December 2023 at the private, urban, tertiary hospital.

While it was initially aimed to match patients with KD and MIS-C by age, this was only partially achieved due to the limited number of MIS-C cases available. Specifically, all MIS-C cases within the study period were included (n=27), as these represented the total population of MIS-C cases admitted at the institution during the study period.

Due to the relatively small number and wider age distribution of MIS-C patients, one-to-one matching was not feasible across all age strata. As a result, the final cohort did not result in a fully age-matched comparison. The median age was significantly higher in the MIS-C group (5 years), compared to both complete and incomplete KD groups (2 and 3 years, respectively). Age distribution also showed significant differences, with more MIS-C patients aged 6-10 and over 10 years compared to those with KD (Table 1).

Table 1. Demographic profile of pediatric patients with Kawasaki disease vs. MIS-C (n= 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n=27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%); Median (IQR)				
Median age, years (IQR)	3 (1-5)	2 (2-4)	3 (1-4)	5 (2-8.50)	**.023**§
Age distribution					
< 1	6 (6.90)	0	3 (6.38)	3 (11.11)	**.007**‡
1-2	32 (36.78)	7 (53.85)	20 (42.55)	5 (18.52)	
3-5	30 (34.48)	4 (30.77)	20 (42.55)	6 (22.22)	
6-10	14 (16.09)	2 (15.38)	3 (6.38)	9 (33.33)	
> 10	5 (5.75)	0	1 (2.13)	4 (14.81)	
Sex					.150†
Male	53 (60.92)	5 (38.46)	32 (68.09)	16 (59.26)	
Female	34 (39.08)	8 (61.54)	15 (31.91)	11 (40.74)	
Family history of KD, siblings	1 (1.15)	0	1 (2.13)	0	>.999 ‡
Family history of MIS-C, siblings	2 (2.30)	0	0	2 (7.14)	.209‡

Statistical tests used: §–Kruskal-Wallis test, †–Chi-square test, ‡–Fisher's exact test.

The majority of patients were male (60.92%), with a higher proportion of males in the incomplete KD group (68.1%) and the MIS-C group (59.3%). There was no significant difference in sex distribution. Family history of KD was reported in one patient with incomplete KD, while two patients with MIS-C had a family history of MIS-C, though these differences were not statistically significant.

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Table 2. Clinical profile of pediatric patients with Kawasaki disease vs. MIS-C (n= 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n= 27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%);Median (IQR)				
Signs and symptoms					
Fever	87 (100)	13 (100)	47 (100)	27 (100)	-
Duration, days	6 (5-8)	6 (6-7)	6 (4-8)	7 (3.50-8.50)	.798§
Rash	59 (67.82)	13 (100)	30 (63.83)	16 (59.26)	**.015‡**
Skin desquamation	4 (4.60)	2 (15.38)	1 (2.13)	1 (3.70)	.129‡
Involvement of extremities	20 (22.99)	6 (46.15)	7 (14.89)	7 (25.93)	.063‡
Cervical lymphadenopathy	40 (45.98)	12 (92.31)	20 (42.55)	8 (29.63)	**.001†**
Bilateral conjunctival injection without exudates	46 (52.87)	13 (100)	26 (55.32)	7 (25.93)	**<.001†**
Oromucosal involvement	34 (39.08)	12 (92.31)	16 (34.04)	6 (22.22)	**<.001†**
Sore throat	8 (9.20)	2 (15.38)	6 (12.77)	0	.076‡
Cough	33 (37.93)	5 (38.46)	13 (27.66)	15 (55.56)	.063‡
Colds	34 (39.08)	4 (30.77)	16 (34.04)	14 (51.85)	.256†
Shortness of breath/ difficulty breathing	8 (9.20)	0	0	8 (29.63)	**<.001‡**
Wheezes	4 (4.60)	0	0	4 (14.81)	**.018‡**
Chest pain	2 (2.30)	0	0	2 (7.41)	.209‡
Hypotension	5 (5.75)	0	0	5 (18.52)	**.004‡**
Tachycardia/ palpitation	5 (5.75)	0	0	5 (18.52)	**.004‡**
Nausea	6 (6.90)	0	1 (2.13)	5 (18.52)	**.019‡**
Vomiting	23 (26.44)	4 (30.77)	6 (12.77)	13 (48.15)	**.003‡**
Diarrhea	24 (27.59)	4 (30.77)	9 (19.15)	11 (40.74)	.118‡
Abdominal pain	14 (16.09)	0	3 (6.38)	11 (40.74)	**<.001‡**
Epistaxis	2 (2.30)	1 (7.69)	1 (2.13)	0	.372‡
Body weakness	2 (2.30)	0	0	2 (7.41)	.209‡
Others	6 (6.90)	0	0	6 (22.22)	**.001‡**
Other clinical findings by system involvement					
Cardiovascular	70 (80.46)	11 (84.62)	38 (80.85)	21 (77.78)	.934‡
Respiratory	43 (49.43)	8 (61.54)	20 (42.55)	15 (55.56)	.358†
Gastrointestinal	31 (35.63)	6 (46.15)	12 (25.53)	13 (48.15)	.100‡
Musculoskeletal	1 (1.15)	0	0	1 (3.70)	.460‡
Genitourinary	14 (16.09)	0	10 (21.28)	4 (14.81)	.187‡
Hematologic	1 (1.15)	0	0	1 (3.70)	.460‡

Statistical tests used:§–Kruskal-Wallis test, †–Chi-square test, ‡–Fisher's exact test.

Comparison of the clinical profiles of patients with KD and MIS-C showed that fever was universally present in all patients, with no significant difference in duration. Rash was significantly more frequent in KD patients compared to MIS-C (100% in complete KD vs. 59.3% in MIS-C). Cervical lymphadenopathy (92.3% vs. 29.6%), bilateral conjunctival injection (100% vs. 25.9%), and oro-mucosal involvement (92.3% vs. 22.2%) were significantly more common in the complete KD group (Table 2).

Respiratory symptoms, such as shortness of breath (29.6% vs 0%) and wheezing (14.8% vs 0%), were significantly more common in the MIS-C group, along with gastrointestinal symptoms, such as vomiting (48.2% vs. 12.8%) and abdominal pain (40.7% vs. 6.4%). Hypotension (18.5% vs 0%) and tachycardia/palpitations (18.5% vs 0%) were also significantly more often seen in the MIS-C group. The cardiovascular, respiratory, and gastrointestinal tract were the organ systems most commonly affected for the three groups. Finally, more MIS-C patients were admitted to special units or ICUs, compared to KD patients (18.5% vs. 4.3%) and simultaneous infections like pneumonia and dengue fever were more common in the MIS-C group (Table 2).

Table 3. Laboratory profile of pediatric patients with Kawasaki disease vs. MIS-C (n = 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n= 27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%); Mean ± SD; Median (IQR)				
Hemoglobin, g/dL [n=86]	11.95 (11.10-12.70)	12.20 (12.05-12.53)	11.50 (10.85-12.35)	12.20 (11.70-13.40)	**.017§**
Hematocrit, % [n=86]	36.10 (33.12-38.25)	37.50 (36.02-38.42)	34.40 (32.55-37.05)	36.60 (33.75-40)	**.030§**
White blood cell, x10^3/uL					
Highest WBC count [n=85]	16.04 (11.99-21.90)	17.65 (14.27-24.21)	16.20 (13.93-21.88)	11.99 (9.55-19.45)	.108§
Lowest WBC count [n=72]	9.58 (6.50-13.17)	13.07 (9.54-18.30)	10.18 (8.51-13.19)	6.30 (4.33-9.25)	**<.001§**
Lymphocyte count					
Highest lymphocyte count, % [n=70]	36 ± 18.76	24.90 ± 14.80	35.21 ± 17.21	41.07± 20.46	.061*
Lowest lymphocyte count, % [n=84]	19.50 (10-26.25)	10 (8.50-20.50)	22 (12-27)	19 (9.50-27)	.252§
Absolute lymphocyte count, mm^3 [n=86]	2814 (1382-3962)	2384 (1282-3487)	2977 (1912-4432)	1890 (1038-3759)	.142§
Neutrophil count					
Highest neutrophil count, % [n=85]	69 (62-84)	82.50 (68-86.25)	68 (62-82)	70 (62.50-84.50)	.318§
Lowest neutrophil count, % [n=69]	53.64 ± 20.42	66.67 ± 19.47	52.91 ± 19.17	50.19 ± 21.21	.106*
Absolute neutrophil count, mm^3 [n=86]	10000 (5992-14578)	13660 (8794-17003)	10432 (8590-14535)	5940 (3508-10444)	**.002§**
Neutrophil:Lymphocyte ratio					
Highest [n=70]	2.05 (1.28-3.74)	4.18 (2.17-6.46)	1.88 (1.31-3.67)	1.50 (1.19-3.09)	.107§
Lowest [n=69]	2.44 (1.55-6.75)	8.20 (2.85-9)	2.13 (1.55-5.75)	2.38 (1.33-5.91)	.149§
Absolute [n=86]	3.25 (2.09-7.12)	6.53 (3.05-8.86)	2.95 (2.24-6.57)	3.14 (1.35-5.91)	.209§
Platelet,x10^9/L					
Highest platelet count [n=85]	489 (392-616)	520 (420-559.20)	510 (397.80-662.50)	483 (362-560)	.273§
Lowest platelet count [n=75]	357 (255.50-421)	368 (279.50-408.50)	364 (327-458)	280 (111-399)	**.013§**
C-reactive protein, mg/L[n=73]	69.50 (14.21-147.43)	46.53 (36.72-106.82)	111.15 (66.62-202.85)	12.89 (6.33-36.60)	**<.001§**
ESR, mm/hr [n=61]	71.43 ± 37.63	61.73 ± 32.66	82.49 ± 32.36	41.91 ± 43.72	**.003***
Serum sodium, mmol/L [n=21]	135.60 ± 4.09	134.10 ± 3.28	133.70 ± 6.47	136.60 ± 3.41	.345*
Albumin, g/dL [n=27]	3.68 (3.22-3.95)	3.86 (3.48-3.93)	3.71 (3.37-4.01)	3.25 (3.20-3.34)	.243§
ALT (SGPT), U/L [n=52]	44.50 (20.06-73.78)	75.24 (64.90-103.62)	41.81 (20.06-67.57)	41.19 (20.29-65.62)	.233§
AST (SGOT), U/L [n=26]	42.70 (27.67-89.96)	74.47 (45.35-109.33)	28.70 (22.03-45.57)	55.37 (25.05-167.38)	.075§
AST:ALT ratio [n=26]	0.69 (0.38-1.61)	1.88 (1.45-2.29)	0.62 (0.38-1.87)	0.42 (0.34-0.83)	**.034§**
Dengue NS1					.543‡
Absent/negative	21 (24.14)	3 (23.08)	10 (21.28)	8 (29.63)	
Present/positive	1 (1.15)	0	0	1 (3.70)	
Not tested	65 (74.71)	10 (76.92)	37 (78.72)	18 (66.67)	
Dengue IgG					.249‡
Absent/negative	15 (17.24)	3 (23.08)	8 (17.02)	4 (14.81)	
Present/positive	5 (5.75)	0	1 (2.13)	4 (14.81)	
Not tested	67 (77.01)	10 (76.92)	38 (80.85)	19 (70.37)	
Dengue IgM					.219‡
Absent/negative	17 (19.54)	3 (23.08)	9 (19.15)	5 (18.52)	
Present/positive	3 (3.45)	0	0	3 (11.11)	
Not tested	67 (77.01)	10 (76.92)	38 (80.85)	19 (70.37)	

Statistical tests used: *–One-way ANOVA test, §–Kruskal-Wallis test, ‡–Fisher's exact test.

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Laboratory findings for patients with KD and MIS-C show that hemoglobin and hematocrit levels were significantly lowest in patients with incomplete KD. White blood cell count, platelet count and absolute neutrophil count were significantly lowest in the MIS-C group. C-reactive protein levels were significantly highest in incomplete KD patients, whereas the MIS-C group had much lower levels. The ESR was significantly highest in the incomplete KD patients. The AST/ALT ratio is significantly higher in the complete KD group. However, other parameters like albumin, ALT, and AST showed no significant differences across groups (Table 3).

Table 4. 2D echocardiogram findings of pediatric patients with Kawasaki disease vs. MIS-C (n = 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n= 27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%); Mean ± SD				
Ejection fraction, %	68 ± 8.31	67.45 ± 7.80	66.55 ± 6.43	68.96± 11.11	.493*
Left ventricular dysfunction					.068‡
Absent	63 (72.41)	10 (76.92)	38 (80.85)	15 (55.56)	
Present	24 (27.59)	3 (23.08)	9 (19.15)	12 (44.44)	
Valvular disease					
Mitral regurgitation	41 (47.13)	4 (30.77)	21 (44.68)	16 (59.26)	.212†
Tricuspid regurgitation	45 (51.72)	10 (76.92)	26 (55.32)	9 (33.33)	**.027†**
Pericardial effusion	57 (65.52)	10 (76.92)	30 (63.83)	17 (62.96)	.706‡
Perivascular brightness of the coronary artery	17 (19.54)	2 (15.38)	7 (14.89)	8 (29.63)	.291‡
Coronary artery aneurysm/ dilatation	49 (56.32)	6 (46.15)	29 (61.70)	14 (51.85)	.517†

Statistical tests used: *–One-way ANOVA test, †–Chi-square test, ‡–Fisher's exact test.

2-DE findings for patients with KD (complete and incomplete) and MIS-C showed that ejection fraction did not differ significantly between the groups (68.96% vs. 67.45% vs. 66.55%). Left ventricular dysfunction was more common in MIS-C patients (44.44%) compared to those with complete KD (23.08%) and incomplete KD (19.15%), though the difference was not statistically significant. Tricuspid regurgitation was significantly more frequent in complete KD patients (76.92%) compared to those with incomplete KD (55.3%) and MIS-C (33.33%). Other findings, such as mitral regurgitation (59.26% vs. 44.68% vs. 30.77%), pericardial effusion (62.96% vs. 63.83% vs. 76.92%), and coronary artery aneurysm/dilatation (51.85% vs. 61.70% vs. 46.15%), did not show significant differences across the groups. Perivascular brightness of the coronary artery was more frequently observed in MIS-C patients (29.63%) compared to complete (15.38%) and incomplete KD (14.89%), though this difference was not statistically significant (Table 4).

Table 5. Treatment provided to pediatric patients with Kawasaki disease vs. MIS-C (n = 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n= 27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%)				
Intravenous immunoglobulin					
1st dose, 2 g/kg	80 (91.95)	13 (100)	46 (97.87)	21 (77.78)	**.010**
2nd dose, 1 g/kg	1 (1.15)	1 (7.69)	0	0	.149
Steroids					
Methylprednisolone	28 (32.18)	2 (15.38)	1 (2.13)	25 (92.59)	**<.001**
Dexamethasone	3 (3.45)	0	0	3 (11.11)	**.050**
Acetylsalicylic acid (ASA)	74 (85.06)	13 (100)	46 (97.87)	15 (55.56)	**<.001**
Treatment					**<.001**
IVIG alone	1 (1.15)	0	1 (2.13)	0	
2 doses of IVIG+ Methylprednisolone + ASA	1 (1.15)	1 (7.69)	0	0	
IVIG + Methylprednisolone	7 (8.05)	0	0	7 (25.93)	
IVIG + ASA	56 (64.37)	11 (84.62)	44 (93.62)	1 (3.70)	
IVIG + Methylprednisolone + ASA	15 (17.24)	1 (7.69)	1 (2.13)	13 (48.15)	
Methylprednisolone alone	5 (5.75)	0	0	5 (18.52)	
Methylprednisolone + ASA	1 (1.15)	0	0	1 (3.70)	
ASA alone	1 (1.15)	0	1 (2.13)	0	
Enoxaparin	1 (1.15)	0	0	1 (3.70)	.460
Tocilizumab	4 (4.60)	0	0	4 (14.81)	**.018**
Additional treatment					
Anti-bacterials	66 (75.86)	8 (61.54)	39 (82.98)	19 (70.37)	.197
Anti-fungals	2 (2.30)	0	0	2 (7.41)	.209
Fluid boluses	5 (5.75)	0	0	5 (18.52)	**.004**
Vasopressors	3 (3.45)	0	0	3 (11.11)	**.050**
Oxygen					
Nasal cannula	5 (5.75)	0	0	5 (18.52)	**.004**
Face mask	5 (5.75)	0	0	5 (18.52)	**.004**
CPAP	2 (2.30)	0	0	2 (7.41)	.209
Mechanical ventilator	3 (3.45)	0	0	3 (11.11)	**.050**
Blood transfusion					
PRBC	2 (2.30)	0	0	2 (7.41)	.209
Platelets	2 (2.30)	0	0	2 (7.41)	.209

Statistical tests used: Fisher's exact test.

Among the treatment interventions for KD and MIS-C, intravenous immunoglobulin (IVIG) was administered to 91.95% of all patients, though significantly fewer MIS-C patients (77.78%) received the first dose compared to KD patients (100% in the complete group and 97.87% in the incomplete group). Methylprednisolone was significantly used more frequently in MIS-C patients (92.59%) than in those with complete (15.38%) or incomplete (2.13%) KD. Acetylsalicylic acid (ASA, aspirin) was significantly used more often in KD patients (100% in the complete group and 97.87% in the incomplete group) compared to MIS-C patients (55.56%). Combination therapies involving IVIG, methylprednisolone, and ASA were significantly more common in MIS-C patients (48.15%) than in KD patients (7.69% for complete and 2.13% for incomplete). Tocilizumab was used exclusively in 14.81% of MIS-C cases and not at all in KD. Additional treatments such as fluid boluses (18.52%) and oxygen therapy (nasal cannula or face mask; 18.52%) were significantly administered

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more to MIS-C patients compared to those with KD (0% for both treatments). Vasopressors and mechanical ventilation were also more commonly used in MIS-C patients (11.11% for both). Blood transfusions, including packed red blood cells and platelets, were provided to a small subset of MIS-C patients (7.41%), though these differences were not statistically significant (Table 5).

Table 6. Outcomes of pediatric patients with Kawasaki disease vs. MIS-C (n = 87)

	Total (n= 87)	Kawasaki disease (n= 60)		MIS-C (n= 27)	p-value
		Complete (n = 13)	Incomplete (n = 47)		
	Frequency (%);Median (IQR)				
Median Length of fever after treatment, hours (IQR)	0.67 (0-12)	9 (0-12)	0 (0-6)	12 (0-18)	**.013**§
< 36 hours	80 (91.95)	10 (76.92)	45 (95.74)	25 (92.59)	.093‡
≥ 36 hours	7 (8.05)	3 (23.08)	2 (4.26)	2 (7.41)	
Median Length of hospital stay, days (IQR)	5 (3.50-7)	4 (3-5)	6 (4-7)	4 (3-7)	.085§
1-5	44 (50.57)	10 (76.92)	17 (36.17)	17 (62.96)	**.006**‡
6-10	37 (42.53)	2 (15.38)	28 (59.57)	7 (25.93)	
> 10	6 (6.90)	1 (7.69)	2 (4.26)	3 (11.11)	
Recurrence of illness	0	-	-	-	-
Other complications					
Myocarditis	4 (4.60)	0	0	4 (14.81)	**.018**‡
Hypotension	5 (5.75)	0	0	5 (18.52)	**.004**‡
Shock	4 (4.60)	0	0	4 (14.81)	**.018**‡
Secondary bacteremia	1 (1.15)	0	0	1 (3.70)	.460‡
Pneumonia	20 (22.99)	1 (7.69)	8 (17.02)	11 (40.74)	**.029**‡
ARDS	3 (3.45)	0	0	3 (11.11)	**.050**‡
Acute kidney injury	1 (1.15)	0	0	1 (3.70)	.460‡
Acute liver injury	11 (12.64)	3 (23.08)	5 (10.64)	3 (11.11)	.495‡
Others	6 (6.90)	0	0	6 (22.22)	**.001**‡
Mortality	2 (2.30)	0	1 (2.13)	1 (3.70)	>.999‡

Statistical tests used:§–Kruskal-Wallis test, ‡–Fisher's exact test.

On assessing the outcomes of pediatric patients with KD and MIS-C, the median duration of fever after treatment (defined as fever duration measured from the time of initiation of definitive treatment until the resolution of fever), was significantly longer in MIS-C patients (12 hours) compared to KD patients. Fever resolved within 36 hours in most patients (92.0%), with no significant difference among the groups. The length of hospital stay tended to be longer in patients with incomplete KD (median 6 days), though the difference was not statistically significant. However, more KD patients (76.92%) had shorter hospital stays (1-5 days) compared to MIS-C patients (62.96%) (Table 6).

Complications such as myocarditis (14.81% in MIS-C vs. 0% in KD), hypotension (18.52% in MIS-C vs. 0% in KD), and shock (14.81% in MIS-C vs. 0% in KD) were significantly more frequent in MIS-C patients. MIS-C patients also had a significantly higher incidence of pneumonia (40.74%) compared to KD patients (17.02% for incomplete KD and 7.69% for complete KD). Acute respiratory distress syndrome (ARDS) was also more frequent in MIS-C patients (11.11%) compared to KD patients, and the difference was nearly statistically significant. Mortality was low across both groups, with only two deaths reported (Table 6).

DISCUSSION

This study highlights several key distinctions between KD and MIS-C in terms of age distribution, clinical presentation, laboratory findings, treatment modalities, and outcomes among pediatric patients in a private, tertiary hospital. Most notably, MIS-C was found to predominantly affect older children, was associated with more severe systemic involvement including cardiovascular, gastrointestinal, and respiratory complications, and more frequently required ICU admission and advanced therapeutic interventions. In contrast, KD was more common in younger children and presented with classic mucocutaneous and lymph node features but generally followed a milder clinical course.

The results indicate notable differences in the age distribution of pediatric patients with KD and MIS-C. In this study, there is a significant prevalence of MIS-C patients among older age groups (aged 6-10 years and over 10 years) as compared with KD (less than 5 years), which is consistent with current literature.[4,9, 10, 11,12] This finding suggests that MIS-C may predominantly affect older children within the pediatric population, and these age-related differences underscore the importance of considering age as an important epidemiologic factor which can help in initial clinical assessment and evaluation.

In terms of clinical manifestations, KD exhibited a significantly higher prevalence of rash, cervical lymphadenopathy, bilateral conjunctival injection, and oral mucosal involvement. Consistent with earlier studies, these key features, apart from fever, were notably more frequent in the KD group.[4,11,13] Respiratory symptoms (shortness of breath and wheezing) and gastrointestinal symptoms (nausea, vomiting and abdominal pain) were more frequently observed in the MIS-C group. Additionally, hypotension and tachycardia or palpitations were also significantly more common among these patients. This aligns with previous local and international research which indicated that MIS-C is associated with increased respiratory, gastrointestinal, and hemodynamic instability.[9,10,14,15,16,17,18] This is likely due to the hyper-inflammatory response following SARS-

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CoV-2 infection. Elevated cytokine levels including interleukin-6 (IL-6) and tumor necrosis factor alpha (TNF-α) contribute to this multi-organ involvement suggesting immune dysregulation that exacerbates these symptoms.[19] Overall, in this study, the cardiovascular, respiratory, and gastrointestinal systems were the most affected organ systems across the three groups.

A greater number of MIS-C patients required admission to specialized units or ICUs compared to those with KD. Additionally, simultaneous infections such as pneumonia and dengue fever were more prevalent in the MIS-C group. This increased likelihood of ICU admission among MIS-C patients is consistent with findings from previous studies which is likely due to its association with severe complications including multi-organ dysfunction (myocarditis, respiratory failure, acute kidney injury) and shock, necessitating intensive monitoring and intervention.[10,15]

As for laboratory findings, hemoglobin and hematocrit levels were significantly lower in patients with incomplete KD compared to those with MIS-C. In KD, patients often exhibit lower hemoglobin and hematocrit levels, typically associated with normocytic, normochromic anemia during the acute phase which is primarily attributed to inflammation-induced anemia. Elevated cytokines, particularly IL-6, increase hepcidin production, which impairs iron absorption and release, leading to functional iron deficiency and reduced red blood cell production. While KD-associated anemia is primarily driven by hepcidin-mediated iron sequestration due to inflammation, the etiology of anemia in MIS-C remains less well understood and warrants further investigation.[2,20]

Laboratory findings revealed significantly lower WBC counts and lower ANC in MIS-C patients, with lymphopenia being a common feature. Studies indicate that MIS-C is associated with leukopenia and lymphopenia, while KD typically presents with leukocytosis.[11,20,21] Patients with KD typically exhibit neutrophilia, characterized by elevated ANC during the acute phase. In contrast, MIS-C patients may present with either neutrophilia or neutropenia, indicating variability in neutrophil counts that can be lower than those seen in KD.[22] Lymphopenia associated with COVID-19 and MIS-C is correlated with higher levels of inflammatory markers, indicating a potential predictor for severe or worse outcomes.[23]

Significantly lower platelet counts were observed in the MIS-C group, consistent with previous studies done.[11,14,17,24,25] This difference is attributed to the underlying immunopathogenesis of each condition, where KD involves immune complex-mediated processes, leading to thrombocytosis; whereas MIS-C is associated with bone marrow suppression and platelet activation, leading to thrombocytopenia.[18,25]

CRP and ESR levels were significantly higher in incomplete KD patients, whereas the MIS-C group had much lower levels. CRP levels were elevated in both conditions, but other studies indicate no significant difference in CRP values between MIS-C and KD patients.[4,22] ESR levels were also elevated in both groups; however, KD patients typically exhibit higher ESR values compared to those with MIS-C, similar to previous studies.[14,20] KD typically presents with significant neutrophilia and a more robust systemic inflammatory response, leading to elevated ESR levels. In contrast, MIS-C often features lymphopenia and thrombocytopenia, which can result in lower ESR values, despite the presence of inflammation.[26]

AST/ALT ratio was elevated in complete KD, suggesting more liver involvement in this group. However, other parameters, such as albumin, ALT, and AST showed no significant differences across groups.

While the three groups generally had preserved ejection fraction indicating normal systolic function, left ventricular dysfunction was more prevalent among MIS-C patients compared to those with KD, but this difference was not significant. Other studies reported a higher incidence of LV dysfunction among MIS-C patients suggesting that myocardial involvement is more pronounced in MIS-C than in KD, where coronary artery lesions are more common instead.[4,11,14] There was no significant difference in the occurrence of coronary artery aneurysms across the three groups. Meanwhile, tricuspid regurgitation (TR) was found to be significantly more common in the complete KD group. TR is a notable cardiac complication of KD, especially during the acute phase. Research shows that TR affects about 48% of KD patients, typically associated with cardiac inflammation and dysfunction.[27]

As for the treatment, methylprednisolone was administered more frequently in MIS-C patients, while ASA was primarily used in cases of KD. Steroid use in MIS-C help mitigate the severe hyper-inflammatory responses

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and multi-organ dysfunction, addressing symptoms like shock and respiratory distress effectively.[28,29,30,31] Conversely, KD is primary treated with IVIG and ASA, which target vascular inflammation and prevent coronary artery abnormalities.

Combination therapies involving IVIG, methylprednisolone, and ASA were common among MIS-C patients, whereas KD patients typically received IVIG and ASA alone. Tocilizumab was administered exclusively in 14.8% of MIS-C cases. IVIG and moderate to high doses of ASA remain the standard recommended treatment for KD, while steroids and biological agents are more commonly utilized for patients with MIS-C, consistent with other studies.[9,10,11,14,15,17,18]

Additional interventions such as fluid boluses, oxygen therapy (nasal cannula or face mask), vasopressors and mechanical ventilation were utilized more frequently in the MIS-C group similar to other studies.[8,11] Severe cases of MIS-C often exhibit distributive or cardiogenic shock, necessitating fluid resuscitation, inotropic support, and in some cases, mechanical ventilation or ECMO.[10,11,14] In contrast, these manifestations and interventions are rarely seen in patients with KD.

The median duration of fever after definitive treatment was longer in MIS-C patients (12 hours), compared to those with KD. MIS-C patients might need additional treatments or interventions (corticosteroids, biologics, etc.) if initial therapies do not effectively reduce their fever. Nevertheless, none of the MIS-C patients was treated with a second dose of IVIG for unresolving fever, but corticosteroid doses were often increased in these situations (data not shown). Therefore, the duration and management of fever may vary significantly between these two conditions.

The length of hospital stay was generally longer for patients with incomplete KD (median 6 days) compared to other groups. This is largely due to the fewer clinical features present in incomplete KD, leading to a longer time before diagnosis and treatment initiation. In contrast, more patients with KD had shorter hospital stays (1-5 days) compared to those with MIS-C. MIS-C patients had longer hospitalizations because they had significantly more complications, such as shock, myocarditis, pneumonia, and ARDS.

Complications like myocarditis, hypotension, shock and pneumonia were significantly more common in MIS-C patients, consistent with previous studies highlighting the higher risk of severe outcomes in this group.[9,10,11,14,17] However, mortality rates were low across both groups, suggesting favorable outcomes with appropriate management. The lone mortality, in the MIS-C group, had a previously undiagnosed secondary immunodeficiency (data not shown).

While this study provides important insights into the comparative differences of KD and MIS-C in a local setting, several limitations should be acknowledged. The sample size, particularly for the MIS-C group, was limited by the number of cases seen during the study period. As a result, the study did not meet the calculated minimum sample size, which may affect the strength of some statistical comparisons. Additionally, the study was conducted in a single private tertiary hospital, where the demographic characteristics, healthcare access, and available treatments may differ from those in public or rural hospitals. Variations in clinical management may also exist, as patients were cared for by different attending physicians. Furthermore, the matching of KD and MIS-C patients was performed unblinded, which may introduce observer bias. Knowledge of the patient's group assignment could have unintentionally influenced clinical assessments or data interpretation, potentially affecting the objectivity of recorded outcomes and comparative analysis.

CONCLUSION and RECOMMENDATIONS

This study, conducted in a private tertiary hospital, demonstrated that patients with MIS-C were generally older and more likely to present with GI and respiratory symptoms, and to develop serious complications such as myocarditis, hypotension, shock, and pneumonia, compared to patients with KD. Laboratory findings in MIS-C patients showed significantly lower WBC, ANC, lymphocyte, and platelet counts compared to those with KD. In contrast, KD patients more frequently exhibited classic mucocutaneous features including conjunctival injection, rash, oral mucosal changes, and cervical lymphadenopathy, as well as higher levels of inflammatory markers such as CRP and ESR and elevated AST/ALT ratios.

These findings reinforce the need to distinguish KD from MIS-C early in the course of illness, as management strategies differ. MIS-C often requires

aggressive interventions such as corticosteroids, biologics (e.g., tocilizumab), intravenous fluids, vasopressors, and respiratory support which are treatments that may not be routinely necessary for KD.

This study identifies several clinical and laboratory parameters that may serve as useful indicators for distinguishing between the two conditions, thereby supporting clinical decision-making particularly in contexts where advanced diagnostic tools are limited or unavailable.

Although the study has certain limitations, it provides valuable preliminary data in a setting where local evidence remains limited. The findings underscore key patterns and differences that may help guide diagnostic and therapeutic decisions, especially in resource-limited areas. Further research involving larger, multicenter cohorts across both public and private healthcare institutions is recommended to validate these findings and enhance their applicability across broader healthcare settings.

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CONFLICT OF INTEREST

None declared.

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