Methods: A retrospective single-center hospital-based cohort study was performed to analyse cancer occurrence among JIA patients treated with biologic agents over the observation period between January 2004 and January 2018. The medical patient records were reviewed to obtain information about the clinical follow-up. As reference data for direct standardization; age, sex and calendar-year-specific incidence rates from Turkish cancer registry were used. The standardized incidence ratio (SIR, ratio of cancers observed to expected) was generated, with 95% confidence intervals.

Results: The study sample consisted of 504 JIA patients, who had been started their first biologic treatment between 2004 and 2018. Mean age was 17.1 years (SD 5.6) with 56% of female proportion. The mean disease duration was 10.3±5.1 years. Median time from baseline to start of the first biological was 17.5 (IQR:43) months. Mean age of initiation of biologic treatment was 9.8 ± 4.2 years. Etanercept was most commonly preferred drug to initiate as first-line biologic treatment (n=361,72%). 172 (34.1%) patients in the cohort required a switch to a second biologic agent. Main reason for switching to another biologic agent was due to lack of response (16.6%). Median duration of biologic use was 35 (IQR:41) months. One cancer occurred within observation period, compared with 0.095 expected (SIR:10.53, 95% CI 0.526 to 51.91). The patient was 18-year-old male, who had previously received etanercept and tocilizumab up until diagnosis of the hematological malignancy.

Conclusion: In our JIA cohort, patients treated with biologic agents appeared to have an increased rate of incident malignancy compared to children of the same sex and age group in the general population in Turkey. However, before mentioning a clear causal relationship, other potential contributing factors such as inflammatory process of the underlying disease itself and the use of concomitant immunosuppressants should be taken into consideration. Additional long-term studies with larger populations are needed to be able to draw definite conclusions.

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SAT0504

IGG4 RELATED DISEASE IN CHILDREN: A SINGLE CENTRE EXPERIENCE FROM NORTH-WEST INDIA

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Background: Immunoglobulin G4 related disease (IgG4RD) is a multisystemic disorder characterized by elevated serum IgG4 levels and infiltration of IgG4 positive plasma cells accompanied by fibrosis. It is mostly considered a disease of adults and elderly people. There is paucity of literature on pediatric IgG4RD. A recent systematic review has found only 25 pediatric cases.

Objectives: To report broad patterns of organ involvement in IgG4RD in children and also to create awareness among treating pediatricians about this new entity.

Methods: The study is based on a review of the hospital records of children with IgG4RD at tertiary centre from North-West India. Diagnosis was based on clinical features, IgG4 levels and characteristic histopathology findings.

Results: Six patients had IgG4RD. **Pt-1;** 10-year-old boy presented with fever for 3 months and significant hepatomegaly. Investigations showed anemia, thrombocytopenia, elevated erythrocyte sedimentation rate (ESR), and C-reactive protein (CRP). Ultrasonography (USG) revealed a hepatic mass (10x5x6 cm) that was confirmed on computed tomography. Liver biopsy showed increased plasma cells (>50 IgG4 positive plasma cells/HPF) and storiform fibrosis suggestive of IgG4 related hepatic mass. Serum IgG4 level was 420 mg/dl (N: 6-28). **Pt-2;** 12-year-old girl

presented with an abdominal lump. Upper gastrointestinal endoscopy showed an intragastric mass with exophytic component. Histopathology of abdominal mass was consistent with IgG4RD. Serum IgG4 level was >170 mg/dl (N: 6-28). **Pt-3;** 21-year-old male symptomatic since age of 14 years with recurrent erythematous swellings over dorsum of the left hand, forearm and chest. Investigations showed anemia, elevated ESR, CRP, and hypergammaglobulinemia. IgG4 levels were 211 mg/dl (N: 7-57). Histopathology from left hand showed lymphoplasmacytic infiltrates, storiform fibrosis, obliterative phlebitis and increased IgG4 plasma cells (>50/HPF). **Pt-4;** 18-year-old girl presented with fever and weight loss. She had anemia, thrombocytosis, elevated ESR and CRP. USG abdomen showed omental thickening. Serum IgG4 level was 215 mg/dl (N: 7-57). Peritoneal and omental biopsy showed fibrosing stage of IgG4RD. **Pt-5;** 7-year-old girl presented with fever, oliguria, and anasarca. Investigations revealed anemia, elevated CRP, ESR, deranged renal functions and nephrotic proteinuria. Renal biopsy showed plasma cell infiltrate, storiform fibrosis, and 10-16 IgG4 plasma cells/HPF; consistent with IgG4 related tubulointerstitial nephritis. Serum IgG4 was 68 mg/dl (N: 7-26). **Pt-6;** 14-year-old, boy presented with painful protrusion of right eye for 8 months. MRI orbit showed bulky and enhancing extra-ocular muscles of the right eye with lacrimal gland involvement. Serum IgG4 was 119 mg/dl (N: 7-26). Histopathology of mass showed extensive fibrosis, obliterative phlebitis and lymphoplasmacytic cells infiltrate with IgG4 plasma cells >30/HPF, consistent with IgG4RD. All patients showed good clinical response to oral prednisolone (1-2 mg/kg/day and subsequently tapered). Four patients required maintenance therapy with azathioprine.

Conclusion: We report 6 cases of pediatric IgG4RD with varied organ involvement and clinical manifestations. Some of the cases presented as space-occupying lesions that can sometimes be confused with neoplastic lesions. It is important to suspect these disorders early and start immunosuppressive therapy promptly to halt end-organ damage due to fibrosis.

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SAT0505

LONG-TERM FOLLOW-UP IN KAWASAKI SYNDROME: EVIDENCE FROM RETROSPECTIVE MONOCENTRIC DATA IN REAL LIFE

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Background: Kawasaki syndrome (KS) is a severe medium size vasculitis with predilection for coronary arteries, mainly affecting young children. The identification of risk factors for coronary artery lesions (CAL) is the aim of the scientific society in order to early detect patients who need a more aggressive therapy.

Objectives: To report clinical data of a monocentric cohort of children with KS over a long-term follow-up.

Methods: A monocentric retrospective study between Feb 1982 and Aug 2018, involving children with KS diagnosis followed at the Rheumatology and Cardiology Unit of A. Meyer Children's Hospital. According to cardiac involvement, patients (pts) have been stratified in subject with absence of CAL (no-CAL) and presence of CAL. This latter has been divided in coronary ectasia (CE) and presence of coronary aneurism (CAN). Data analysis was conducted performing a descriptive analysis and assessing risk factors for CAL with analysis of variance (Tukey, LSD and Bonferroni test) and correlation test (Spearman rho test, Chi-square test). Each pt, regardless coronary involvement, underwent a scheduled cardiological follow-up after 6-8 weeks (6 months, 1 year and ergometric test at 8 years old). Pts with CAL received additionally cardiac evaluations on clinical need. Pts with a follow-up of less than 1 year were excluded from follow-up analyses.

Results: Data from 361 pts (219 M, 142 F, aged 1 month-24 years and 5 months) have been reported. Median age of disease onset was 2 years and 1 month; 90% of pts developed the disease < 5 yrs. Disease onset at < 6 months was in 32 patients (8.9%), at < 1 year in 94 (26%). Full clinical data were available in 267 pts. Beside fever,

polymorphic rash was in 244 pts (91.4%), conjunctivitis in 229 (85.8%), mucositis in 224 (83.9%), extremities abnormalities in 196 (73.4%) and lymphadenopathies in 165 (61.8%). The average duration of fever was 7 days (range 1-25 days). CAL were detected in 73 pts (20.2%): 58 (16%) had CE, 15 (4.15%) had CAn. Median long-term follow-up was 10 years and 2 months (range 1years – 36 years). The variance analysis in the different groups of CAL showed a significative difference as regard age at disease onset ($F=2.77$, $p=0.025$), duration of fever ($F=16.32$, $p<0.0001$), CRP value ($F=6.94$, $p=0.001$) and day of first administration of IVIG ($F=7.963$ $p<0.0001$) (Table). A significant correlation between CAL and disease onset at <6 months ($\rho=0.137$, $p=0.009$), the need to administer 2 IVIG doses ($\rho=0.305$, $p<0.001$), and male ($\rho=-0.109$, $p=0.038$) has been highlighted.

At the last follow-up, in the group of no-CAL (261 pts), cardiological visit, ECG, echocardiography and ergometric test (performed 177/261 pts) were normal in all pts. At the last available follow-up, 53 pts with CE had normal cardiological visit, ECG, echocardiography and ergometric test (performed 39/53 pts). Conversely, all 13 pts with CAn showed a normal cardiological visit, whilst ECG was abnormal in 1 patient (7.69%) and echocardiography showed persistent CAn in 8 (61.53%). Ergometric test was performed in 9/13 pts showing abnormal results in one pt (11.11%).

	No-CAL	CE	CAn
N pts	288	58	15
Median age at disease onset	2 y 1 m	2 y 5 m	5 m
Median duration of fever (days)	7	8	11
Average value of CRP (mg/dl)	6.81	8.38	14.15
Day of first dose of IVIG	8	7	11

Conclusion: Our long-term follow-up in a large, even monocentric, cohort reports possible risk factor of CAL according to current literature. Our long-term follow-up assesses, in real life, the benign course of KS in children without CAL after 6-8 weeks from onset. According to recent guidelines, stopping cardologic assessment in no risk pts results economically advantageous, timesaving and able to reduce emotional discomfort in children and their families.

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SAT0506

KAWASAKI DISEASE AND CARDIOVASCULAR OUTCOMES IN THE LAST 25 YEARS. STUDY OF 55 PATIENTS FROM A REFERRAL HOSPITAL IN THE NORTH OF SPAIN

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Background: Kawasaki disease (KD) or “mucocutaneous lymph node syndrome” is a systemic vasculitis in children that involve medium-sized vessels with predilection for coronary arteries. Due to the high probability of cardiovascular complications, an early diagnosis and treatment is required.

Objectives: A) To describe demographic, clinical and analytical features in a cohort of patients with KD diagnosis from northern Spain. B) To assess the rate of long-term cardiovascular outcomes.

Methods: We set up an observational study of patients with KD in a University Hospital between Jan-94 and Dec-18. Classic classification criteria were used for diagnosis¹. Diagnosis of aneurysms was made by serial echocardiography and/or coronary-CT. Results are expressed as mean±SD or as median and interquartile range (IQR) as appropriate.

Results: 55 patients (28 women/27 men), with a mean age at diagnosis of 3.6±2.8 years. 60% presented a previous infection prior to diagnosis, most of them viral infection (table 1). At diagnosis, 43 patients were classified as complete KD (78.2%), presenting fever >5 days (98.2%), maculopapular rash (98.2%), oral mucosal involvement (89.1%), hands and feet edema (74.5%), conjunctival hyperemia (85.5%) and cervical adenopathy (50.9%). Analytically, there was an increase in acute phase

reactants, presence of leucocytosis and thrombocytosis. All patients presented a monophasic disease course with a mean duration of symptoms of 12.6±4.9 days (table 2). In 8 patients (14.5%) coronary aneurysms were demonstrated and pericarditis/myocarditis was observed in 2. However, after a follow-up of 13.9±7.0 months, only 1 of them maintained coronary involvement. 98.2% received intravenous immunoglobulin (IGIV) according to international recommendations (2 g/kg). All patients received anti-inflammatory doses of acetylsalicylic acid at diagnosis and subsequently antiplatelet doses. 2 required endovenous corticosteroid, and in 1, an anti-TNF drug (infliximab) was needed (table 2). The incidence rate of KD in our cohort was 0.37 cases/100,000/year, 8-10 times lower than other national series². However, mean age at onset, presence of previous viral infections and aneurysms development, were similar to countries with higher prevalence³.

Conclusion: Although the incidence of KD in our population is lower than other territories, it is still the most frequent cause of acquired heart disease in childhood. Early recognition and treatment with IVIG improve prognosis leading to a decrease in the rate of long-term cardiovascular outcomes.

Table 1.

	Patients with KD (N=55)
Baseline data	
Age at diagnosis, mean±SD	3.57 ± 2.78
Sex (female/male), n (%)	28/27 (50.9/49.1)
Nationality (Spanish), n (%)	52 (94.5)
Follow-up (months), mean±SD	107.1 ± 75.7
Pregnancy and Birth	
Pregnancy (to term), n (%)	48 (87.3)
Weeks of pregnancy, mean±SD	39.3 ± 1.76
Infection during pregnancy, n (%)	2 (3.6)
Birth weight (grams), mean±SD	2935.8 ± 1223.7
Birth height (cm), mean±SD	50.0 ± 2.26
Predisposing factors	
Previous infections, n (%)	33 (60.0)
- Respiratory tract, n (%)	17 (30.9)
- Skin, n (%)	6 (10.9)
- Gastrointestinal, n (%)	11 (20.0)
Concomitant diseases, n (%)	22 (40.7)
- Asthma, n (%)	9 (16.4)
- Atopy, n (%)	9 (16.4)
- Others, n (%)	6 (10.9)
Family background of autoimmune disease, n (%)	1 (1.8)

Table 2.

	Patients with KD (N=55)
Kawasaki Disease	
Kawasaki criteria (complete/incomplete), n (%)	43/12 (78.2/21.8)
Fever, n (%)	54 (98.2)
Involvement of skin, n (%)	54 (98.2)
Involvement of oral mucosal, n (%)	49 (89.1)
Cervical adenopathy, n (%)	28 (50.9)
Hand or feet edema, n (%)	41 (74.5)
Conjunctival hyperemia, n (%)	47 (85.5)
Arthritis, n (%)	1 (1.8)
Gastrointestinal symptoms, n (%)	16 (29.1)
- Diarrhoea, n (%)	6 (10.9)
- Vomits, n (%)	8 (14.5)
- Abdominal pain, n (%)	4 (7.3)
Aseptic meningitis, n (%)	2 (3.6)
Pleural effusion, n (%)	1 (1.8)
Duration of symptoms (days), mean±SD	12.6 ± 4.9
Monophasic course, n (%)	55 (100.0)
Cardiovascular outcomes	
Acute manifestations (pericarditis/myocarditis), n (%)	2 (3.6)
Aneurysms, n (%)	8 (14.5)
Heart attack, n (%)	0 (0)
Sudden death, n (%)	0 (0)
Laboratory tests	
CRP (mg/dl), mean±SD	11.7 ± 8.3
ESR (mm/h), median [IQR]	82.0 [51.3 - 107.5]
Thrombocytosis, n (%)	32 (59.3)
Platelet (× 10 ⁹ /L), median [IQR]	525 [346 - 878]
Treatment	
Immunoglobulin, n (%)	52 (98.2)
Acetylsalicylic acid, n (%)	55 (100.0)
Clopidogrel, n (%)	3 (5.5)
LMWH, n (%)	0 (0.0)
Corticoids, n (%)	2 (3.6)
Biological therapy (IFX), n (%)	1 (1.8)

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