Making rational the therapeutic approach to Still's disease in children and adults

OP0197

THE INITIAL TREATMENT OF SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS: AN INTERNATIONAL COLLABORATION AMONG 10 REGISTRIES

M. B. Son[1], Y. Kimura[2], K. Aalto[3], L. Berntson[4], J. Dallas[1], C. Duffy[5], M. Glerup[6], J. Guzman[7,8], T. Herlin[6], P. Hovi[3], K. Hyrich[9,10], J. Klotsche[11], B. Magnusson[12], V. Mcityre[9], E. Nordal[13], S. Özen[14], M. J. Santos[15], B. Sözeri[16], T. Beukelman[17].
[1]Boston Children's Hospital, Boston, United States of America; [2]Hackensack Meridian Health Hackensack University Medical Center, Hackensack, United States of America; [3]New Children's Hospital, Helsinki, Finland; [4]Uppsala University, Uppsala, Sweden; [5]CHEO, Ottawa, Canada; [6]Skejby Sygehus, Aarhus, Denmark; [7]The University of British Columbia, Vancouver, Canada; [8]BC Children's Hospital, Vancouver, Canada; [9]The University of Manchester, Manchester, United Kingdom; [10]Manchester University NHS FT, Manchester, United Kingdom; [11]Deutsches Rheuma-Forschungszentrum (DRFZ), Berlin, Germany; [12]Karolinska University Hospital, Stockholm, Sweden; [13]UiT The Arctic University of Norway, Tromso, Norway; [14]Hacettepe Üniversitesi Tıp Fakültesi, Ankara, Turkey; [15]Hospital Garcia de Orta, Almada, Portugal; [16]Ankara University Institute of Health Sciences, Ankara, Turkey; [17]University of Alabama at Birmingham, Birmingham, United States of America

1: Medication Usage within First Year (pre/post 2012 where available)

	Glucocorticoids (IV+PO) %	Methotrexate %	Biologic %	Anti-IL-1 %	Anakinra %	Tocilizumab %
USA 2010-2011 n=9	22	56	33	33	33	0
USA 2012-2018 n=91	50	17	71	70	57	17
Canada 2005-2010 n=88	76	60	17	10	10	0
UK 2001-2011 n=69	78	71	10	3	3	0
UK 2012-2018 n=31	48	58	29	19	19	19
Portugal 2008-2011 n=73	42	36	4	3	3	0
Portugal 2012-2018 n=19	74	47	32	16	16	21
Sweden 2009-2015 n=50	96	46	62	30	28	30
Denmark 1997-2011 n=83	86	40	13	6	6	2
Denmark 2012-2018 n=32	50	12.5	75	63	63	19
Turkey 2000-2011 n=71	93	77	58	42	37	20
Turkey 2012-2018 n=114	98	52	40	32	28	9
Germany 2000-2011 n=271	73	62	13	7	6	<1
Germany 2012-2018 n=249	57	47	27	19	10	20
Norway 1997-2011 n=26	81	62	12	4	4	8
Norway 2012-2018 n=5	100	60	100	20	20	80
Finland 2006-2011 n=12	42	42	17	0	0	8
Finland 2012-2018 n=12	25	8	8	0	0	8

Background: The introduction of biologics has transformed care for children with systemic juvenile idiopathic arthritis (SJIA). Differences in treatment approaches between countries and how they have changed over time are not well studied.
Objectives: We contrast the initial features, treatment and 12-month outcome in SJIA across 10 JIA registers in Europe and North America.
Methods: Data were extracted locally from 10 Registers including manifestations at diagnosis, medication use over first year and outcomes (Physician Global Assessment (PGA), active joint count (AJC)) at 12 months. Data was compared before/after 2012 to assess change over time. Weighted (w) means were used to adjust for varying number of patients/Register.
Results: 1,149 patients; 553 had medication data for 2012-2018; primarily female and Caucasian; median age at diagnosis 5.3-8 years. Median duration of symptoms prior to first visit varied (0-3.3 months). Glucocorticoid (GC) use was common in the first year (w_average 72% (range 33-96%)). Biologic use included IL-1, IL-6 and TNF inhibitors. The proportion of patients treated with biologics, primarily anakinra, increased after 2012 (Table 1). W_mean PGA and AJC at the 12±3 month visit were 1.55 and 1.57, respectively (Table 2). At one year, the proportion of patients prescribed GC varied (w_mean 40%, range 26-60%).
Conclusion: Analysis of SJIA patients across 10 countries show that time to first rheumatology visit was highly variable. Although local factors influence treatment decisions, biologic use increased after 2011; anakinra most common. Nearly 75% of patients were prescribed steroids within the first year but seemed to decrease after 1 year. More study is needed on long-term outcomes in SJIA patients within this modern era.

2: Clinical Outcomes at 12 Months -all years

	AJC Median [IQR]	PGA Median [IQR]	GC Use, %
USA	0 [0, 0]	0 [0,0]	47
Canada	0 [0, 2]	0.1 [0, 2.7]	41
UK	0 [0, 0]	0.5 [0, 1.7]	53
Portugal	0 [0, 0]	0.3 [0, 1]	53
Sweden	0 [0, 0.5]	0 [0, 0.5]	31
Denmark	0 [0, 0]	-	26
Turkey	4 [2, 7]	4 [3, 7]	60
Germany	0 [0, 1]	0 [0,2]	36
Norway	0 [0, 0]	0.5 [0, 2]	45
Finland	0 [0, 0]	0 [0, 0]	33

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OP0198

A SYSTEMATIC REVIEW TO INFORM THE EULAR POINTS TO CONSIDER WHEN ANALYSING AND REPORTING COMPARATIVE EFFECTIVENESS RESEARCH WITH OBSERVATIONAL DATA IN RHEUMATOLOGY

K. Lauper[1], J. Kedra[2], M. De Wit[3], B. Fautrel[4], T. Frisell[5], K. Hyrich[6], F. Iannone[7], P. M. Machado[8], L. Midtbøll Ørnbjerg[9], Z. Rotar[10], M. J. Santos[11], T. Stamm[12], S. Stones[13], A. Strangfeld[14], R. B. M. Landewé[15,16], A. Finckh[17], S. A. Bergstra[18], D. Courvoisier[1].
[1]HUG, Geneva, Switzerland; [2]iPLESP, Paris, France; [3]EULAR Patient Research Partner, Netherlands, Netherlands; [4]Rheumatology, Pitié-Salpêtrière Hospital, Paris, France; [5]Clinical Epidemiology, Karolinska Institutet, Stockholm, Sweden; [6]Centre for Epidemiology Versus Arthritis, University of Manchester, Manchester, United Kingdom; [7]GISEA University Hospital of Bari, Bari, Italy; [8]Centre for Rheumatology & Department of Neuromuscular Diseases, UCL, London, United Kingdom; [9]DANBIO, Rigshospitalet, Copenhagen, Denmark; [10]biorx.si, Rheumatology UMCL, Ljubljana, Slovenia; [11]Reuma.pt, Faculdade de Medicina, Lisboa, Portugal; [12]Section for Outcome Research, CeMSIIS, Vienna, Austria; [13]EULAR Patient Research Partner, Bolton, United Kingdom; [14]Programme area Epidemiology, DRFZ, Berlin, Germany; [15]Zuyderland Medical Centre Heerlen, Rheumatology, Limburg, Netherlands; [16]Rheumatology, Amsterdam University Medical Centre, Amsterdam, Netherlands; [17]Rheumatology, Geneva University Hospitals, Geneva, Switzerland; [18]LUMC, Rheumatology, Leiden, Netherlands

Background: Comparative effectiveness studies using observational data are increasingly used. Despite their high potential for bias, there are no detailed recommendations on how these studies should best be analysed and reported in rheumatology.
Objectives: To conduct a systematic literature review of comparative effectiveness research in rheumatology to inform the EULAR task force developing points to consider when analysing and reporting comparative effectiveness research with observational data.
Methods: All original articles comparing drug effectiveness in longitudinal observational studies of ≥100 patients published in key rheumatology journals (Scientific Citation Index > 2) between 1.01.2008 and 25.03.2019 available in Ovid MEDLINE® were included. Titles and abstracts were screened by two reviewers for the first 1000 abstracts and independently checked to ensure sufficient agreement has been reached. The main information extracted included the types of outcomes used to assess effectiveness, and the types of analyses performed, focusing particularly on confounding and attrition.
Results: 9969 abstracts were screened, with 218 articles proceeding to full-text extraction (Figure 1), representing a number of rheumatic and musculoskeletal diseases. Agreement between the two reviewers for the first 1000 abstracts was 92.7% with a kappa of 0.6. The majority of the studies used several outcomes to evaluate effectiveness (Figure 2A). Most of the studies did not explain how they addressed missing data on the covariates (70%) (Figure 2B). When addressed (30%), 44% used complete case analysis and 10% last observation carried forward (LOCF). 25% of studies did not adjust for confounding factors and there was no clear correlation between the number of factors used to adjust and the number of participants in the studies. An important number of studies selected covariates using bivariate screening and/or stepwise selection. 86% of the studies did not acknowledge attrition (Figure 2C). When trying to correct for attrition (14%), 38% used non-responder (NR) imputation, 24% used LUNDEX[1], a form of NR imputation, and 21% LOCF.

Figure 2: Results of the Systematic Literature Review

Figure 2A: Main outcomes

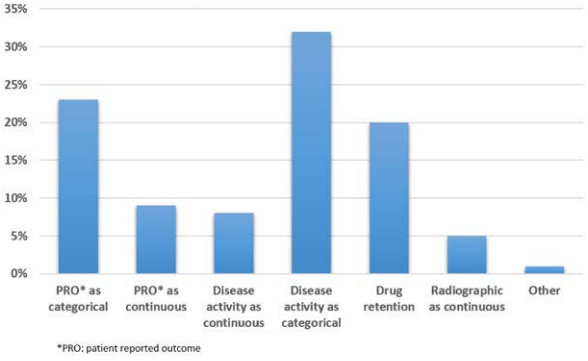


Figure 2B: Missing Data

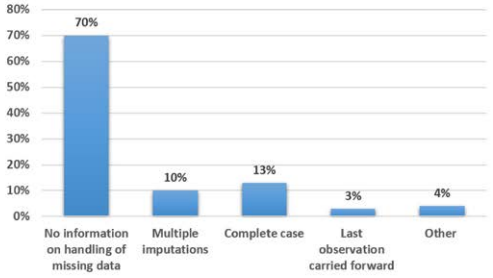
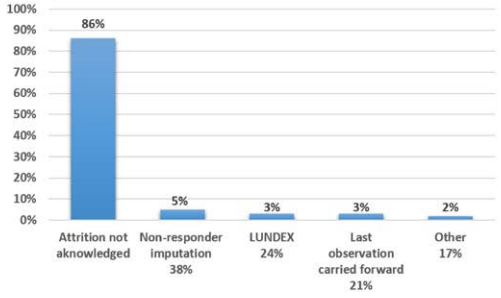


Figure 2C: Attrition



Conclusion: Most of studies used multiple outcomes. However, the vast majority did not acknowledge missing data and attrition, and a quarter did not adjust for any confounding factors. Moreover, when attempting to account for attrition, several studies used methods which potentially increase bias (LOCF, complete case analysis, bivariate screening…). This systematic review confirms the need for the development of recommendations for the assessment and reporting of comparative drug effectiveness in observational data in rheumatology.
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[1] Kristensen et al. A&R. 2006 Feb;54(2):600-6.
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OP0199

POINTS TO CONSIDER WHEN ANALYSING AND REPORTING COMPARATIVE EFFECTIVENESS RESEARCH WITH OBSERVATIONAL DATA IN RHEUMATOLOGY

D. Courvoisier[1], K. Lauper[1], S. A. Bergstra[2], M. De Wit[3], B. Fautrel[4], T. Frisell[5], K. Hyrich[6], F. Iannone[7], J. Kedra[8], P. M. Machado[9], L. Midtbøll Ørnbjerg[10], Z. Rotar[11], M. J. Santos[12], T. Stamm[13], S. Stones[14], A. Strangfeld[15], R. B. M. Landewé[16,17], A. Finckh[1]. *[1]Geneva University Hospitals, Geneva, Switzerland; [2]LUMC, Rheumatology, Leiden, Netherlands; [3]EULAR Patient Research Partner, Amsterdam, Netherlands; [4]Pitié-Salpêtrière Hospital, APHP, Rheumatology, Paris, France; [5]Karolinska Institutet, Clinical Epidemiology, Stockholm, Sweden; [6]University of Manchester, Centre for Epidemiology Versus Arthritis, Manchester, United Kingdom; [7]University Hospitals Bari, Rheumatology, Bari, Italy; [8]Institut Pierre-Louis d'épidémiologie et de Santé Publique, Paris, France; [9]University College London, Centre for Rheumatology & Department of Neuromuscular Diseases, London, United Kingdom; [10]Rigshospitalet, Center for Rheumatology and Spine Diseases, Copenhagen, Denmark; [11]University Medical Centre Ljubljana, Rheumatology, Ljubljana, Slovenia; [12]Faculdade Medicina de Lisboa, Rheumatology, Lisboa, Portugal; [13]Medical University Vienna, Centre for Medical Statistics, Informatics and Complex Systems, Vienna, Austria; [14]EULAR Patient Research Partner, London, United Kingdom; [15]Deutsches Rheuma-Forschungszentrum, Programme area Epidemiology, Berlin, Germany; [16]Zuyderland Medical Centre Heerlen, Rheumatology, Limburg, Netherlands; [17]Amsterdam University Medical Centres, Rheumatology, Amsterdam, Netherlands*

Background: Comparing drug effectiveness in observational settings is hampered by several major threats, among them confounding and attrition bias bias