and other nucleic acid sensing TLRs was quantified by RT-PCR and Western blotting; activation (phosphorylation) of various signal transduction molecules was determined by Western blotting. Furthermore, the role of TLR9 in osteoclast differentiation and activation was investigated *in vitro*.

Results: The TLR9 antagonist significantly reduced clinical signs of arthritis by approximately 50%. Histological analyses revealed diminshed inflammation, cartilage degradation, bone erosion and significantly reduced numbers of osteoclasts in animals treated with the TLR9 antagonist. However, when treatment was started after onset of arthritis TLR9 inhibition had no effect on arthritis development and severity. IL-6 serum levels were greatly diminished in animals treated with the TLR9 antagonist and expression and activation of NF-kB in lymph nodes was reduced. Remarkably, mRNA levels of TLR7 and TLR9 strongly differed in the course of *in vitro* osteoclastogenesis. Whereas TLR7 expression did not change throughout osteoclastogenesis, expression of TLR9 was higher in precursor cells than in mature osteoclasts and stimulation with a TLR9 agonist (CpG) completely inhibited osteoclastogenesis.

Conclusions: Taken together, the results suggest an important role for TLR9 in the T cell-dependent initiation phase of PIA and thus important involvement of endogenous DNA released during apoptosis, necrosis or netosis in the initiation of autoimmune arthritis and during osteoclastogenesis. The possible relevance of these findings for human RA needs to be further elucidated in future experiments.

References:

[1] Hoffmann MH, Skriner K, Herman S, Baumann C, Steiner CW, Ospelt C, Meyer B, Gleiss A, Pfatschbacher J, Niederreiter B, Tuncel J, Zanoni G, Steiner G. Nucleic acid-stimulated antigen presenting cells trigger T cells to induce disease in a rat transfer model of inflammatory arthritis. J Autoimmun. 2011; 36:288–300.

[2] Stoop JN, Fischer A, Hayer S, Hegen M, Huizinga TW, Steiner G, Trouw LA, Toes RE. Anticarbamylated protein antibodies can be detected in animal models of arthritis that require active involvement of the adaptive immune system.Ann Rheum Dis. 2015; 74(5):949–50.

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THURSDAY, 15 JUNE 2017

To be and to become: transition from paediatric to adult care

OP0195 WHAT IS THE IMPACT OF JUVENILE IDIOPATHIC ARTHRITIS IN ADULTHOOD? THE MONOCENTRIC EXPERIENCE OF 240 PATIENTS FOLLOWED IN A TRANSITION TERTIARY CLINIC OF RHEUMATOLOGY

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Background: There are many differences in clinical manifestations, assessment and management of Juvenile Idiopathic Arthritis (JIA) between childhood and adults' arthritis onset. The transition from pediatric to the adult care emphasizes a lot of aspects that need to be addressed.

Objectives: To describe the long-term outcome of JIA.

Methods: Two-hundred and forty patients affected by JIA and referred to a transition care rheumatology tertiary centre were considered between 1999 and 2016. The outcome assessment included disease activity, medications, number of prosthesis implantation, pregnancy, mortality, social integration (mobility, employment status and educational level).

Results: Seventy-four (30.8%) males and 166 (69.2%) females were included; 53 (22.1%) patients were lost in follow up. Subtypes of JIA at disease onset included 101 oligoarthirtis (42.1%), 67 polyarthritis (27.9%), 43 systemic arthritis (17.9%), 7 psoriatic arthritis (2.9%), 22 enthesitis related arthritis (9.2%). Forty-eight (20%) patients had persistent uveitis. Ninety-three implant prosthesis and 14 arthodesis were recordered. The average disease duration was 20 years, the median age of the patients was 27 (18–57) years. Five deaths (2.1%) occurred in this cohort. At follow up 117 (48.7%) had low active disease activity, 70 (29.2%) had moderate disease activity, 14 (5.8%) had a high disease activity, 24 (10%) were on remission ON medication and 15 (6.3%) OFF medication. Among patients still on medication, 59 (24.6%) were treated with oral steroids, 18 (7.5%) with csDMARDs and 169 (70.4%) with bDMARDs. Seventy-five (31.3%) patients had a higher educational level (university), 195 (81.3%) had an employment, 128 (53.3%) had a driving license. Twenty-one (8.8%) pregnancies were registered. The transition age was considered after age of sixteen years old. In this contest, it was important the multidisciplinary approach of each patient that was realized with the collaboration of other specialists (ophthalmologist, orthopedic, dermatologist, obstetric, psychologist).

Conclusions: In the era of biologic therapy there was an important improvement in a lot variables of the long-term outcome of JIA. One-hundred-eighty-seven (77.9%) patients were still in tight control, not only because of the continuation of the biological therapy but also because of the multidisciplinary care carried out even during remission. JIA often persists over the adulthood. The long term follow up and care of these patients has to be conducted by a rheumatologist expertized in JIA in collaboration with other specialists.

Disclosure of Interest: None declared

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THURSDAY, 15 JUNE 2017

Heterogeneity in JIA

OP0196 CHANGING PATTERNS OF JUVENILE IDIOPATHIC ARTHRITIS PATIENTS TREATED WITH ETANERCEPT FROM 2000 TO 2016 IN THE GERMAN BIKER REGISTRY POPULATION

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Background: There is increasing experience with Etanercept (ETA) in juvenile idiopathic arthritis in the BIKER Registry.

Objectives: To report on practice changes ETA utilization and outcome over a period of 16 years.

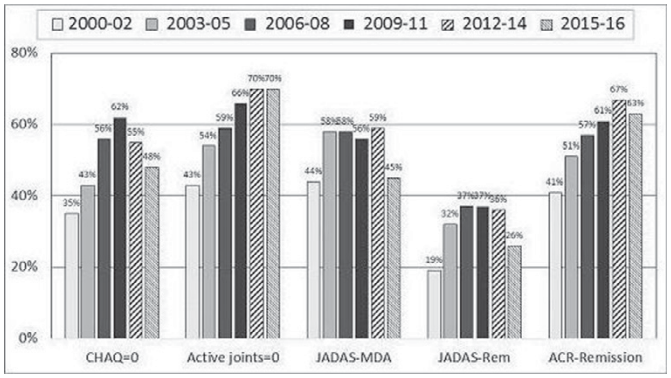
Methods: 6 cohorts of pts were created according to inclusion period. Patients' and disease characteristics,the utilization of DMARDs, steroids, NSAIDs were analysed. Efficacy was judged by PedACR30/50/70/90, JADAS and ACR-remission.

Results: Records from 2105 JIA pts treated with etanercept with at least a baseline and one follow up form were analysed. Most pts were females (67%). The median age of disease onset increased from 5.9 years in the early to 9.3 years in the later cohorts while age at start of treatment remained stable (about 13 years). Median disease duration markedly decreased from 5.3 to about 2 years. Most pts had RF neg. polyJIA followed by extended oligoarthritis. In the more recent cohorts the rate of enthesitis related arthritis increased and the rate f systemic JIA decreased (table). At registry start, 20% of newly enrolled pts belonged to the systemic JIA category compared to <1% in 2016. During the study period, the overall utilization of glucocorticoids at baseline decreased from 54% to 19% ($P<0.0001$), NSAID from 90% to 72% ($P<0.0001$), MTX from 78% to 64% ($P=0.004$). ACR30/50%70/90 response rates at month 12 were 80%/74%/59%/40% and did not vary over time while the rate of patients reaching no active joint/CHAQ DI=0/JADAS-MDA/JADAS-Remission/ACR-Remission increased from 43%/35%/44%/19%/41% to 69%/48%/45%/26%/63%.

Abstract OP0196 – Table 1

Year	2000–2002 N=248	2003–2005 N=337	2006–2008 N=444	2009–2011 N=462	2012–2014 N=436	2015–2016 N=178
Disease duration (y)	6.1±4.0	5.1±4.0	4.2±3.7	3.7±3.0	3.3±3.1	3.4±3.0
JIA category (%)	20.6	12.2	4.3	3	1.4	0.6
Sys JIA	25.8	31.8	32.9	36.6	33	33.7
RFneg PA	12.5	11.0	8.1	8	3.7	9.0
RFpos PA	2.4	4.5	6.1	6.1	3.4	5.1
PersOA	18.1	13.1	21.4	22.3	21.3	21.9
Ext OA	9.7	14.7	16.4	13.6	26.1	22.5
ERA	4.8	8.9	7.7	7.8	8	4.5
PsA unclass JIA	6	3.6	3.2	2.6	3	2.8
Uveitis	12.1	5.7	10.2	5.4	4.1	2.3
Baseline concom. NSAID/steroids/MTX/other DMARDS (%)	90.3/53.2/77.8/5.2	88.7/42.7/76.3/5	84.9/32.4/69.1/3.8	71/31/68.4/3.7	78.7/27.3/61/6.7	74.2/18.5/62.9/4.5
Active joints	10.3±9.8	9.0±9.4	7.8±9.0	6.2±8.0	4.9±6.5	4.6±5.5
Phy VAS (0–10)	6.8±2.4	5.8±2.6	5.2±2.6	4.9±2.9	5.0±2.6	4.8±2.5
Pat VAS (0–10)	5.7±2.7	5.4±2.7	4.8±2.6	3.7±2.7	3.7±2.6	3.7±2.3
CHAQ	1.0±0.8	0.8±0.7	0.7±0.6	0.6±0.6	0.5±0.6	0.5±0.5
CRP in mg/l	44.6±56.8	25.2±32.2	18.2±32.1	10.6±19.1	9.8±29.1	8.9±18.1
JADAS10	21.4±7.7	18.5±7.5	16.6±6.7	14.1±8.7	13.3±6.8	13.3±8.7

Changes in all parameters were significant ($p<0.001$) in Kruskal-Wallis-Test/Chi-quare.



Conclusions: In recent years, children have been treated earlier, received less concomitant treatment with NSAIDS, corticosteroids as well as DMARDs. More recent cohort of patients had less severe disease at baseline, but also showed a markedly better outcome already at one year of treatment reflected by higher rates of patients with no active joint, a CHAQ DI of 0, a JADAS-MDA, and ACR-Remission. These data suggest that early disease control and better pre-selection of patients who need biologics are important to improve outcome and safety in children with JIA.

Disclosure of Interest: G. Horneff Speakers bureau: Abbvie, Pfizer, Roche, Novartis, MSD, K. Minden Speakers bureau: Abbvie, Pfizer, Roche, Genzyme, Pharm-Allergan, I. Foeldvari: None declared, G. Ganser: None declared, J. Haas: None declared, J. Brunner: None declared, I. Becker: None declared

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OP0197 **EVALUATION OF A DOSING REGIMEN FOR TOCILIZUMAB IN PATIENTS YOUNGER THAN TWO YEARS OF AGE WITH SYSTEMIC JUVENILE IDIOPATHIC ARTHRITIS**

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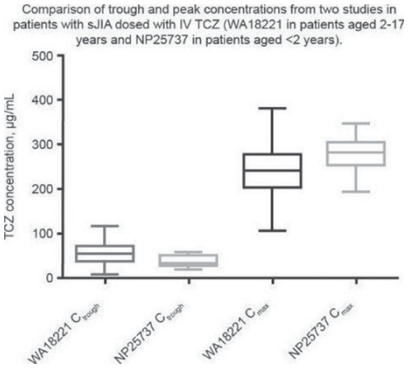
Background: Tocilizumab (TCZ) is approved for the treatment of systemic juvenile idiopathic arthritis (sJIA) based on clinical trials in patients (pts) ≥2 years of age. This study (NP25737) is the first for a biologic in sJIA pts <2 years of age.

Objectives: To evaluate the pharmacokinetics (PK), pharmacodynamics (PD), efficacy, and safety of TCZ in sJIA pts <2 years of age in a phase 1 trial.

Methods: Pts with uncontrolled sJIA and symptoms for ≥1 month prescreening who failed treatment with corticosteroids and NSAIDs and had no history of allergy to TCZ or other biologics received open-label TCZ 12 mg/kg intravenously (IV) every 2 weeks (dose calculated at each visit based on body weight). Pts were treated up to week 12 and could continue until the age of 2 years or were treated for 1 year from baseline. End points included PK (primary) at week 12, PD and efficacy (exploratory), and safety. Comparison was made to exposures from a previous trial in sJIA pts ≥2 years of age (WA18221) that was the basis for approval of TCZ in sJIA.

Results: Eleven pts were enrolled; median (range) age was 16 (10–22) months and weight was 10.40 (6.8–11.5) kg. Serum TCZ concentrations, estimated using population PK analysis, peaked immediately after infusion; median (range) maximum concentration was 282 (195–347) μg/mL (steady state reached by week 12), and median (range) trough concentration was 34.3 (19.2–59.7) μg/mL. Peak and trough exposures were within the exposure range in older children (244 [109–382] to 54.3 [10.9–117] μg/mL; Figure). Observed mean±SD soluble IL-6 receptor levels were 47.65±16.40 ng/mL at baseline and 927.83±148.07 ng/mL at day 71. CRP levels were 250.81±425.11 mg/L and 2.80±3.56 mg/L, respectively. ESR levels were 59.40±27.47 mm/h and 2.00±1.00 mm/h, respectively. Mean±SD Juvenile Arthritis Disease Activity Score-71 improved from 22.27±10.09 at baseline to 3.66±4.66 at day 71. By week 12, 10 pts had 32 adverse events (AEs) and 4 withdrew due to AEs. Infections or infestations were the most frequently reported AEs (10 events, 9 pts). Five serious AEs (SAEs) occurred; 3 pts had SAEs of hypersensitivity that led to withdrawal; 1 of these pts then experienced SAEs of foot and mouth disease and sJIA flare after study withdrawal. No actual cases of MAS were reported, but 2 pts had laboratory abnormalities indicative of MAS according to 2016 criteria.[1] No deaths occurred during the study.

Conclusions: TCZ exposures achieved in this study fell within the range of the previous trial in sJIA pts ≥2 years of age. This study provides evidence that TCZ is effective in sJIA pts <2 years of age, achieves PK and efficacy similar to those



demonstrated previously in older pts, and has a similar AE safety profile, but there was a higher incidence of serious hypersensitivity events and suspected MAS.

References:

[1] Ravelli A et al. Ann Rheum Dis. 2016;75:481–9.

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Barrier free employment for young people with RMDs

OP0198-PARE **FIT FOR WORK ONLINE: SUPPORTING EMPLOYEES WITH RMDS, EMPLOYERS AND HEALTHCARE PROFESSIONALS**

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Background: Seven million working days are lost each year in Ireland due to RMDs, such as back & neck pain or stiffness, arthritis, and limb pain. This is therefore a significant problem which obviously impacts on both employers, employees and healthcare professionals. That is why Arthritis Ireland has developed *Fit for Work Online* - an eLearning programme which focuses on the issues that face these three groups.

Objectives: The objective of the project was to develop an online educational programme to provide information, guidance and support to employees, employers and healthcare professionals on working with RMDs.

Methods: In 2015 Arthritis Ireland began its developments of an online education programme "*Fit for Work Online*" which focuses on the tripartite relationship between the employee, employer and healthcare professional.

3 video lessons were developed as part of this eLearning programme.

- The first lesson is aimed at employees who are living with an RMD
- The second lesson is aimed at employers who have a staff member who is living with an RMD (and finally)
- The third has been developed for health professionals to update them on current guidance around RMDs and ongoing employment

A key message in all 3 videos is that *working is good for your health.*

Since employment has been shown to boost health and happiness, it is crucial, whenever possible, that people who are living with an RMD, remain in employment, or return to work, as soon as they can. That is the central message of this eLearning programme.

A number of issues were addressed in the development of this programme in order to convey these important issues:

- Firstly, employees who are living with an RMD are encouraged to take control of their condition. People living with an RMD are encouraged to consider practical steps and issues which would support them in staying in, or returning to, work.
- Secondly, from an employer's perspective, in addition to concerns about the welfare of their employees, there are other issues to consider, and it is natural for instance to be concerned about the possible impact of any health condition on their employees' performance & reliability, and consequently on their business. Adaptations, supports, flexibility and so on need to be considered.
- Finally, health professionals need to encourage, advise and facilitate people who are living with RMDs to remain in, or return to work.

Results: The *Fit for Work Online* programme will go live in February 2015. It is planned that a report on the first four months of the programme's delivery and implementation will be available at EULAR 2017 in Madrid.

Conclusions: The direct cost of RMDs at work in Ireland is estimated to be