We are IntechOpen, the world's leading publisher of Open Access books Built by scientists, for scientists

4,800
Open access books available

122,000
International authors and editors

135M
Downloads

Our authors are among the

154
Countries delivered to

TOP 1%
most cited scientists

12.2%
Contributors from top 500 universities

CLARIVATE ANALYTICS BOOK CITATION INDEX INDEXED

WEB OF SCIENCE™

Selection of our books indexed in the Book Citation Index in Web of Science™ Core Collection (BKCI)

Interested in publishing with us?
Contact book.department@intechopen.com

Numbers displayed above are based on latest data collected.
For more information visit www.intechopen.com

14

Transition of Care in Rheumatology: Managing the Rheumatic Patient from Childhood to Adulthood

Philomine van Pelt[1,2] and Nico Wulffraat[2]
[1]*Department of Rheumatic Diseases, EMC Rotterdam and Department of Pediatric Rheumatology, EMC Rotterdam*
[2]*Department of Pediatric Immunology, UMC Utrecht*
Netherlands

1. Introduction

1.1 Transition of care

Chronic rheumatic diseases in childhood are an important group of chronic conditions with often severe morbidity and carrying a major impact on growth and development for the affected individual. It is estimated that 30-70% of the patients have continuing disease activity or persisting limitations in functional ability or psychosocial function in their adult life (1-4).

In most countries infants and children with rheumatic diseases are treated by specialist pediatric rheumatologists, nurses and physiotherapists. When such children with chronic diseases reach adulthood (usually between the age of 16 -24), transition to adult health care is needed. This transitional face coincides with the period in which adolescence, or puberty, takes place. Blum and colleagues coined a very useful definition for transition (5). They described transition as 'the purposeful, planned movement of adolescents and young adults with chronic physical and medical conditions from child-centered to adult-oriented health care systems'

The transfer to adult health service requires specific skills and knowledge from the health care providers. When ignored this may result in poor health indicators and loss to follow-up for adolescents with a chronic disease. Basically one needs to recognize that children with severe chronic diseases transgress into a two faced transition to become an adolescent with a chronic rheumatic condition that receives care from a team expert in both pediatric and adult rheumatology. Nowadays, it is generally believed that a multidimensional transition of care is needed (6;7).

In the US a general statement was made by pediatricians and primary health care that transition leading to the transfer of care is one of six primary goals for youth with special healthcare needs {25}

Apart from these issues, other questions to be discussed in this chapter are:

- What is the right time for this transfer of care and who plays a role in this process?
- Which aspects of adolescence play a role in the transfer and transition of care?
- What special preparations are needed for this transfer?
- What does an ideal transition of care system look like?

Most published descriptions of the organization of transition of care for rheumatic diseases refer specifically to Juvenile Idiopathic Arthritis (JIA). Therefore this chapter will also focus on JIA. For the other rheumatic diseases the JIA centered transition programme may serve usefull. However in such cases (for instance SLE, juvenile dermatomyositis, autoinflammatory syndromes) the team also needs to include renal and dermatological expertise.

2. Factors influencing the transfer from pediatric to adult care

2.1 Differences in culture of medical treatment and care in pediatrics and adult medicine

In pediatric medicine, health care should not be limited to the patient's disease. Other aspects of physical development should be taken into account such as growth and puberty. Education and social behavior in the presence of a chronic disease are equally important issues, not only for social development, but also for future opportunities in finding employment. Sport and exercise are important for maintaining social contacts as well as mental and physical health. Furthermore, parents and siblings are also involved in the disease process of the diseased child. Limitations caused by the disease may have an effect on the social life of the whole family.

In adult medicine much attention is given to the rheumatic disease itself, the disease activity and side effects of medications. The impact of the disease on work, family and social life is less important and is hardly discussed by the medical doctor. When supporting staff like nurse practitioners, social workers or physiotherapists are available, these factors are taken into account, which certainly play an important part on issues such as staying in employment, self efficacy, compliance etc. The care for the patient is often structured in a supply-oriented fashion and can be divided into the available separate disciplines**.** (8;9). If transition programmes are fully patient-oriented they will offer a merge of paediatric and adult care.

Pediatric care	Adult Care
Family-focused (parents strongly involved)	Patient-focused
Generalist, interdisciplinary	Multidisciplinairy
Socially orientated	Disease orientated
Informal atmosphere, relaxed	Formal atmosphere, to the point
Attention for development, school and social functioning	Accent on treatment, self-management and compliance

Table 1. Differences in pediatric and adult care (8;9)

2.2 Who is involved in the transition process?

First and foremost of course, is the adolescent suffering from the chronic (rheumatic) disease, the patient who is transferred to adult care.

Secondly, the paediatric specialist, the person who is responsible for handing over a complete medical file of the patient. The paediatric specialist is usually assisted by allied health professionals such as specialised physical therapists, psychologists and social workers. In addition, the paediatric services together with the adult services are involved in preparing the patient and the parents for the new situation at adult health care.

The adult specialist needs to be prepared for looking after a young patient in adolescent age with a long medical history. Often the disease has already caused irreversible damage and influences growth and development, as well as functional and social performance. One needs to realise that the pattern of joint erosions are often different from adults with RA and that the uveitis so commonly seen in JIA is rare in RA. For young patients visiting the adult department with a relative short disease duration, without such effects of longstanding disease this is of course different. Also, the adult specialist needs to deal with a patient in the adolescence phase. Often the disease has had influence on growth and development, and functional and social outcome. This, however, is different for young patients attending the adult department who had a relatively short disease duration, and who haven't displayed the effects of a longstanding disease.

Finally, the parents and extended family who have been involved in the disease process for a long time as they have had to take care of the medication and appointments at the hospital and sometimes needed to give extra support in nursing their child. When growing up, the child needs less support. The parent is required to release the responsibilities and hand them over to their child. At the adult department all responsibilities must be taken on by the patient themselves. This requires a self confident, considerate and often independent person that is capable to self-manage all aspects of the disease.

3. Aspects of transition

3.1 The concept of self-management

This is described as the transition of the patient from a dependant (childhood) state into a self caring adult person.

As the young child grows up into adulthood via adolescence it will develop a set of tools to cope with this new situation. Such a transition into adulthood (defined by Hardoff (10)) is a period of biological, social and emotional change, in which the adolescent has 4 major tasks:

- to consolidate their identity;
- to achieve independence from their parents;
- to establish adult relationships outside the family;
- to find a vocation.

The adolescent with a chronic disease, however, has additional tasks:

- they have to cope with the disease;
- the treatment and its functional limitations;

- they have to learn to do that independently from the support team which was available to them in their childhood, e.g. the parents and pediatric health services.

Hence, it is not surprising that the value of self-management interventions that train patients to utilize relevant skills is the subject of increased attention (11), see ref White articles [5]. Self-management may be one means of bridging the gap between patients' needs and the capacity of health and social care services to meet those needs.

Self-management is generally held as one of the key elements in a transition program.

But other skills are also important like communication, decision making and assertiveness (12-14). Patients in the adolescent ages were interviewed by Stinson et al (13) about their strategies of gaining control over managing their illness on their own. The two strategies that assisted the process of transition were:

- gaining knowledge and skills to manage the disease and;
- experiencing understanding through social support.

The authors concluded that web-based interventions could be a promising tool in supporting the acquisition of knowledge (13).

Table 2 summarizes the knowledge and skills needed for transition of the adolescent. These items can be prepared by the pediatric and adult health department workers including the specialist, but also parents and peers (healthy as well as those with a chronic disease) are important (12;15).

I: Knowledge for transition
Condition including effects on body, medical history and prognosis
Therapy regimen including names, doses, side effects, rationale, risk of non-adherence
Purposes of tests and procedures
Relevant medical terminology
Specific issues, e.g., antibiotic prophylaxis, immunizations
Role of health care providers, what they do, and how to access their services
Meaning of transition
Differences between pediatric and adult health care
Healthy lifestyles in terms of exercise, nutrition, sun exposure etc
Impact of drugs and alcohol on condition and therapy
Impact of condition and therapy on sexual and reproductive health
Impact of condition and therapy on education and vocation
II: Skills for transition
Health: Feeling confident to see health professional independent of parents Accessing health care independently, including booking appointments, seeking advice and refilling prescriptions Self management of their condition Adherence to therapy and appointments Pain and fatigue management skills

Psychosocial: Independent living skills, self care, meal preparation, hobbies Peer support including independent social life and social competencies
Educational/ vocational: Communication skills Vocational education, work experiences, (part-time) jobs

Table 2. Knowledge and skills needed for transition (12, 15):

Recently several internet based programs for increasing self-management have been developed (16;17).

Interestingly, in a recent survey in our outpatient population of 142 adolescents (age 10-27 years) with JIA , internet is widely used (97.9% of the patients had access to internet) and 77% were daily on the internet. However, only 26% surfed for information about their disease.

The time to start the self-efficacy process with gaining knowledge about disease and related issues should be as young as possible. This will help them to cope with their disease later on in life, its limitations and the opportunities that arise, for instance in finding suitable employment, social activities they can partake in, the importance of taking their medication and monitoring their own health including making own appointments and independently visiting the clinic (15). Data from a UK study supported an early start to transition, whereby 11-14 year-old patients with JIA showing maximum improvement in disease knowledge after 12 months of participation in a transitional care program, which was significantly higher than that of a 17-year-old patient at baseline (18).

3.2 Documentation of disease activity of JIA patients

Despite its name juvenile, JIA is not a disease in childhood only, it may persist into adulthood. In retrospective and cross sectional studies which have been published, complete remission after at least 10 years of disease duration is described in 33-67% of the patients, depending on JIA subtype, and patient population (2;4;19-22). The prognosis is better in the oligoarticular persistent subtype and worse in the systemic group.

Due to higher rates of remission, it is expected that patients with the oligoarticular persistent subtype are lost to follow up. A selection bias of patients after longer disease duration is therefore to be expected. Results of the disease activity of patients with very long disease duration should therefore be analyzed with care as most of the long-term outcome studies of patients with JIA are retrospective and cross-sectional.

Further in this chapter we will highlight the aspect of the tools used to measure disease activity.

3.3 Medication history

Prognosis in RA has improved enormously these last years since intensive combination treatment regimes have been introduced (23). Complete remission is now noted, low DAS scores or other activity scores are commonly used to control disease activity (24;25). Only very recently remission criteria for RA are defined, but studies using these criteria are not published yet (26).

Similar to adults, treatment for JIA has improved dramatically in the past 20 years. Outcome of older patients is therefore hard to compare with younger patients. Patients are treated differently over time and between centers. Before the introduction of MTX and SASP in the 1990's patients were treated with aspirin and corticosteroids.

From the 1990's on the pyramid was dismantled (27). The introduction of DMARDs like MTX and SASP changed prognosis (28;29) (30;31)

Another true revolution was the use of "biologicals" in JIA. Instead of controlling the disease nowadays physicians aim at curing the disease. Especially the follow up of the group of JIA patients in remission without medication, as defined by Wallace (32) will show us in due time whether this is indeed possible.

Following the initial description of the effects of etanercept in adult patients with RA, the first study in children treated with etanercept was described in 2000 by Lovell et al (33). Other biological therapies for children were described in later years. Biological treatment like adalimumab and abatacept, first used successfully in adults with RA are now prescribed to younger patients with JIA. Other biologic agents were not studied in a way that enabled FDA or EMA registration and such drugs are thus still used off label in children.

3.4 Compliance

Compliance is generally defined as a patient's adherence to a recommended course of treatment. Other words used are agreement, conformity, cooperation, respect, submission. Agreement, conformity are difficult terms for adolescents, as they are searching for methods to become independent from the usual carers (parents, but indeed sometimes also the doctor). It is not surprising that compliance in this patient group on their way to independence can be low.

Corticosteroids with known side-effects as a moonface and disfiguring striae have low compliance rates. The combination of alcohol and MTX is not advised, which in turn, can cause delay in therapy. Compliance can be a huge problem in severe, probably life threatening systemic diseases like SLE or systemic JIA.

In the long term, compliance may have an influence on the outcome of JIA patients. As adolescents have a low compliance rate in visiting their doctor, their patient data are lost in the follow-up phase. Changing schools or finding a job sometimes also causes a migration, similarly, when disease activity is quite low, the patients don't make new appointments.

Exact figures are therefore not known.

Kroll described the factors that comprise treatment adherence. In his view, the facilitating strategies are child-centered information, therapy management, behavior modification and parental monitoring (34). Modern techniques can be helpful in improving compliance like internet-based self management programs with telephone support (17) or electronically monitored adherence to medication(35).

Increasing compliance can be supported by parents and other (health) carers. Notwithstanding the above , the main advice for the parent is to "let the patient go".

3.5 Education

Several studies have been done to evaluate educational and occupational outcome of young adults with JIA. Results are conflicting in different countries.

In the USA (36) educational and occupational outcome after a median disease duration of 12.6 years, were similar to adult peers. In Canada, educational level was lower for female patients and unemployment rates were higher(20).

In the UK, Foster et al and Packham et al evaluated in different studies educational attainment and employment status. They concluded excellent educational attainment but a high rate of unemployment among the patients (37;38).

In Germany, also educational achievements of patients were higher but rate of unemployment was lower compared with the age-matched population (4).

The long-term outcome studies evaluated all JIA subtypes, although median disease duration was longer in the UK studies (12.6 years versus 21 and 28 years). Whether lower functional outcome plays a role in unemployment ratio is not known as this is not investigated in all studies.

In some countries more support is given to persons with disabilities. It may be that JIA patients receive sickness or disability benefit and are therefore not included in unemployment figures.

3.6 Psychological aspects

Psychological and social aspects as well as coping strategies are well documented in younger children with JIA (39;40).

Only a few long term outcome studies in adolescents and adults with juvenile arthritis have been published. Significantly impaired physical health but no psychosocial health differences were found compared to the general (Norwegian) population(41). Patients with significant disabilities (Steinbrocker class III or IV) (42) or longstanding disease activity (43), show psychological distress in about one-third of the cases.

Despite reported psychological problems only few patients show social adjustment problems (4;19)). Overall, the literature on psychological outcome has shown contradictory conclusions. This may be due to variations of the measures used, time since onset of disease, inclusion or omissions of controls, the study design, and disease severity or degree of disability. The age seems particularly important because psychosocial adjustment may change as patients pass through life's developmental stages(44).

3.7 Long term outcome of JIA

In longterm follow up studies approximately half of the patients have active disease and/or changes in body structures to a variable extent. Approximately one-third of the patients rated themselves as being functionally limited (3). Little is known about long-term effects of medication, especially the more recently introduced DMARD's and biologicals.

Complete remission in JIA is achieved in 33-67% of the patients, depending on the subtype.

In JIA remission criteria are defined by Wallace et al (32). One of the main differences with adult health care is that complete remission in JIA is defined as "no disease activity", no active joints and low sedimentation rate and or CRP with low physician's global assessment. In adult health care remission used to be defined by low DAS scores but some disease activity may persist.

Remission per subtype JIA

- Systemic 47-76%
- Oligo persistent/extended 35-57%
- Polyarticular RF+ 0-15%
- Polyarticular RF – 30-46%
- Enthesitis related 18%
- Psoriatic 33%

(2;4;19;20).

In the past few years, the prognosis for RA has improved enormously since the introduction of intensive combination treatment regimes (23). Complete remission has not been noted, low DAS scores or other activity scores are commonly used to judge disease activity (24;25). However, for instance for patients with JIA the aim of the pediatrician is to reach complete remission of the disease. This is in sharp contrast to the generally accepted disease activity within adult rheumatology. Until very recently, in adult RA new remission criteria have been defined, although new studies using these criteria have not been published yet (26).

The long term complications of JIA and RA are different. Adequate control of inflammation has made Felty syndrome and amyloidosis nowadays very rare complications in JIA, whereas it occurs in 1.4% of adults with RA. In RA, residing functional disability is higher (HAQ >0: is seen in 36% - 72% of patients), as are erosions and other radiological changes like growth deformities, fusion, osteopenia (seen in 25%- 68%).(2;3;19;21;45).

3.8 Developmental aspects

Research has been carried out on the impact of JIA later on in the life of its patients, and important differences between healthy adolescents and young adults suffering from JIA have been found.

For instance in studies done in Europe one of the aspects is the growth difference in JIA patients. In Germany, girls final height is 2 cm shorter than their peers, for boys this is 1 cm (46). In Great Britain, the final height differential is much larger, 4 cm in girls and 4 cm in boys, compared to their peers (47). In the Netherlands, a study is ongoing on the developmental aspects of adolescents with JIA. We found 2 cm decrease in the final height of girls, and only 0,5 cm for boys. Research on growth differences in the United States or South America hasn't been carried out yet.

Growth and final height depends on several aspects.

Malnutrition is common among patients with a chronic disease. Further influence on final height are the age at which the puberty starts, and the clinical progression of puberty and growth spurt (48;49). Possibly abnormalities in the growth hormone axis plays a role (49-51).

A number of (retrospective) studies have been carried out amongst adult women with JIA and the potential influence of JIA on sexuality and fertility and indirectly, on their number of children. No randomized controlled trials are known, all data were retrospectively collected. Conclusions of the authors were that the number of successful pregnancies is comparable to healthy controls, although in our observation this conclusion may be too hasty. The number of miscarriages was not mentioned in any (retrospective) studies, and also fecundity (time to conceive) was not taken into account. More research needs to be done in adult patients (1;52;53).

3.9 Transfer of a complicated medical history

Failure to coordinate care between providers of the pediatric and adult health system adversely affects both quality and efficiency of care. Planning, information and warnings to the next care provider are very important. Documentation of relevant information is important in view of the multidisciplinary nature of transitional care. One can imagine the results of prescribing wrong dosage of for example MTX or TNF blockers on internal organs. Also when medication history is insufficient (eg not mentioning cyclofosfamide) severe physical problems are to be expected.

In a study carried out in the UK it was shown that detailed and extensive documentation significantly improved following participation in a transitional care research program (15).

Nowadays with the support of electronic patient files these problems should be of the past, but these modern techniques are not widely available yet. A summary of medical history and used medication on the past and current medical problems can overcome this problem. Social and psychological issues must also be explained and transferred to social workers within the adult department.

3.10 Transfer of knowledge from pediatrician to adult physician

In 2002, a consensus document on transition of care was approved by the American Academy of Pediatrics, The American Academy of Family Physicians, and the American College of Physicians-American Society of Internal Medicine (54). This consensus statement states that all young people with special health care needs such as rheumatic diseases should have the following: a professional with the appropriate transition care knowledge and skills who attends to the unique challenges of health care transition; a written health care transition plan by the age of 14 including a constantly updated medical summary that is portable and accessible to the youth and family; care guided by the primary and preventive care guidelines for al adolescence and young adults; and affordable, continuous health coverage.

Unfortunately, in 2005, a survey done in Pennsylvania, USA, to evaluate the consensus statement in practice, revealed that 57% of the practices had not started any of the transition guidelines (55).

Also outside the US, the availability of appropriately trained staff and in-service training to maintain staff members' skills and knowledge in adolescence is considered important. In a

Delphi study done in the UK, availability of professionals who were knowledgeable in transitional care was reported to be best practice (56).

However, well trained staff in knowledge of adolescence is rare.

McDonagh described the unmet skills and training needs in health professionals dealing in adolescence. In the below many subjects are mentioned.

	Perceived skill/comfort level (Very low/low) *n* (%)	Perceived knowledge of available information/resources (Very low/low) *n* (%)	Perceived importance of issue being addressed in a rheumatology clinic (moderate/high/very high) N (%)
Suicide risk	15 (68)	13 (59)	19 (86)
STDs/HIV/hepatitis	12 (54)	7 (33)	17 (77)
Gay/lesbian sexuality*	11 (52)	16 (76)	13 (59)
Drug use	10 (45)	13 (59)	20 (91)
Eating disorders	9 (41)	11 (52)	20 (91)
Physical/sexual abuse	9 (41)	6 (27)	20 (91)
Dating/vulnerability	9 (41)	17 (77)	17 (77)
Vocation/employment	7 (32)	9 (41)	20 (91)
Contraception/safe sex	6 (27)	8 (36)	19 (86)
Parental conflict	5 (23)	12 (55)	18 (82)
Driving	5 (23)	9 (41)	18 (82)
Alcohol use	4 (18)	9 (41)	21 (95)
Smoking	4 (18)	7 (32)	20 (91)
Body image*	3 (14)	15 (68)	21 (95)
Peer relations	3 (14)	12 (55)	19 (86)
Nutrition	3 (14)	3 (14)	21 (95)
Depression/anxiety	2 (9)	8 (36)	21 (95)
Psychosomatic complaint	2 (9)	4 (18)	20 (91)
Education*	2 (9)	5 (23)	19 (86)
Exercise	0 (0)	0 (0)	20 (91)

Table 3. (57) Respondents' perceived skill/comfort level in dealing with adolescent issues, their perceived knowledge of resources and their importance in a rheumatology clinic (n = 22)

4. Adaptations from pediatric to adult health care

JIA is a heterogeneous group of 7 diseases, comprising from systemic JIA, oligo-articular and poly-articular JIA, enthesitis related JIA (also called juvenile spondylarthropathy), psoriatic arthritis and undifferentiated JIA (58). Only the extended oligo-articular JIA and poly-articular JIA can fit in the diagnosis RA with regards to disease symptoms.

The definition of Rheumatoid Arthritis used to be strict, (ACR criteria 1987), but recently this definition is considered to be imprecise, since also early arthritis with relative short disease duration is treated as RA. However, the term is generally used to describe a symmetrical, persistent, and destructive poly-arthritis often associated with a rheumatoid factor or with positive results in tests for anti-cyclic citrullinated peptide (anti-CCP) antibodies (59).

4.1 Different scoring methods

Most studies describing long term outcome of JIA patients use adult outcome parameters to show for example disease activity, functional outcome or psychosocial outcome ((1;3;20).

But are those the right tools to compare the disease activity in each individual patient from the start of their disease into their adult life? Or even, can we use these parameters to compare RA patients with JIA?

Pediatric multicenter trials have developed a uniformly accepted way of measuring disease activity (60). The initial ACR scores for children (Ped-ACR 30-50-70-90) were adapted from the adult scores (ACR 30-50-70 and 90%). It should be noted however that these ACR/Printo scores were specifically designed for measuring change induced by medication. More recent tools such as JADAS include a single point total score similar to the adult DAS instead of measuring the percentage of change to baseline values. Most used variations in adults with RA are DAS 28 and DAS 44 (61;62). In pediatric rheumatology in 2009 the Juvenile DAS is introduced, variations are the JADAS 10, 27 and 71. The Correlations between the 3 JADAS versions was comparable, but better than the DAS 28 and the CDAI (Clinical Disease Activity Index).

Functional outcome at pediatric age is measured by the Childhood Health Assessment Questionnaire, a derivative from the Health Assessment Questionnaire, which is used for adults. We have compared both questionnaires and used the same adolescents and young adults with JIA. Despite strong correlations in consistency, and independent of age, we found a lack of agreement for the outcome of CHAQ and HAQ (63). This implies that the functional outcome as measured by the CHAQ is not directly comparable to the HAQ when measured at the same time. Direct matching is therefore not possible. Further research in follow-up data is ongoing. When following the patient at an adult age for a longer period, as will be done in transition phase, outcome parameters will have to be comparable to those measured at pediatric age.

A multidimensional assessment questionnaire was proposed including physical, psychosocial and compliance aspects (JAMAR) (64). The JAMAR includes 15 parent or patient-centered measurements or items that assess well-being, pain, functional status, health-related quality of life, morning stiffness, disease activity, disease status and course, joint disease, extra-articular symptoms, side effects of medications, therapeutic compliance, and satisfaction with illness outcome. The JAMAR is proposed for use as both a proxy-report and a patient self-assessment report, with the suggested age range of 7-18 years for use as a self-assessment report. However even this multidimensional score does not measure in detail the consequence of certain limitations for participation in daily life activities. The full impact of certain limitations can only be learned from our patients.

4.2 Models for transition of care

Transition of care for the adolescent with a chronic disease is complex. Many people are involved, the patient, his or her parents, the pediatrician and the adult specialist. Often also other co-workers like social workers or physiotherapists are involved. Therefore a number of health service models have been proposed, including the patient-focussed model, a disease-focussed model, hospital-based model, a team-based outside the health service, a named person, a voluntary organisation and a primary care model (65).

For patients with rheumatic diseases 3 units have described their programs in literature (66-68), all disease focussed models.

While et al developed the disease focussed model of transition further and described 4 models (table)

Models of transition for evaluation
Direct transition (communication and information sharing only)
Sequential transition (includes the development of new services like adolescent clinics)
Developmental transition (includes skill training and support system development)
Professional transition (transfer of expertise only)

Table 4. (11)

When summarizing the most important needs for transition the following key components for the organisation of care can be noted (12):

- Future focused, patient-centered
- Inclusive for parents/ caregivers
- Early start (11-14 years)
- Multidisciplinary, paediatric and adult services, social workers, education
- Dynamic and flexible process in a resilience framework (ITP, Individual Transitional Plan)
    - Coordinated, uninterrupted health care
    - Age and developmentally appropriated
    - Skills training for the young person in communication, decision making, assertiveness, self-management

5. Complications in transition of care

5.1 Complications for the patient

Complications of transition have been well described(6). During transition a whole list of topics needs to be discussed with the adolescent and this is usually the cause of such complications. Some of these topics are for example self care and communication skills: medication is not prescribed because the patient doesn't ask for a recipe; the patient gets pregnant while taking MTX because contraceptives haven't been discussed.

McDonagh suggested a list of topics to be discussed during transition of care are(6):

- decision making

- independent visits
- phoning with own queries
- communication skills
- self care including compliance
- level of parental concern

It is suggested that quality of medical care for young people with chronic disease deteriorates after transfer to adult services has taken place (69).

Potential explanations of deteriorating quality of medical care could be due to:

- reduced therapy goals (low disease activity instead of remission)
- reduced compliance of the adolescent
- insufficient transfer of care by the pediatric and adult health services

A complication in insufficient transfer of medical care of the adolescent with a rheumatic disease can be that the patient is lost in the medical system and not returning to a medical clinic for rheumatic diseases (either returning back to the pediatrician or visiting a different adult department).

It is not clear how many patients are lost in their follow up after their transition to adult health care. Even in large outcome studies of adult patients with JIA exact numbers can not be determined (2-4).

There are numerous reasons why these patients are missing from the medical system after their transfer to adult health care:

- Their disease may be in remission
- They may have moved or even migrated abroad
- There is insufficient availability of (adequate) rheumatologists
- There is insufficient preparation for adult health care (failure of transition of care process)
- Non compliance of the patient:
  Too busy with study, new home, new friends or new job to visit a rheumatologist
  Loss of confidence in adult care
  No interest in own health
  Incapacity to deal with independent self-care

Apart from the risk of no-shows, there are potential problems that the patient finds it difficult to cope with such as:

- their persistent disease activity to which insufficient attention is given
- their reduced functional ability whereby no additional help is offered
- the side effects of their medication
- psychological symptoms like depression
- insufficient self care, ongoing dependency on parents or partner

In pediatric health care, the medical approach is from a multi-disciplinary perspective whereby the patient's whole well-being is taking into account.

5.2 Complications for the carers

Most adult rheumatologists are not trained in adolescent medicine and the subjects associated with adolescence and their subsequent handling of the rheumatic disease. Also some professionals may simply not like looking after adolescents and find their non-compliance and uncommunicative behaviors an irritation in an adult clinic (6).

The adolescent patient (as any other healthy person of this age range) requires special attention as he or she is in a period of transition from a dependant to an independent state. At adolescence the child's focus shifts away from family to peers. This important move should be no different for chronically ill adolescents. Adolescents begin to adopt a multitude of new social and emotional roles and learn to cope with altered bodily functions.

Adolescents with a chronic disease are constantly struggling with independence. At the same time, their illness often keeps them tied physically, emotionally and financially to their families.

Moreover, a chronic disease like JIA or its treatment may interfere with the normal growth process like muscle strength and sexual maturity (70).

Factors which play a role during normal adolescence are

- Independence and assertiveness
- Peer relationships
- School at work
- Physical appearance
- Sexuality
- Death and dying

Besides culture differences, adult rheumatology services are frequently different from pediatric rheumatology services in the following aspects(6):

- Time available for consultation
- Continuity of care in terms of the same doctor at consecutive visits
- Format of referrals to allied professionals, usually by short paper referrals rather than detailed in person overview during a meeting of the rheumatology team.

When these issues are not taken into account during the transition phase transfer, problems are expected.

6. Future developments

6.1 Optimal organization of transition of care

Papers and textbooks dealing with transition of care often provide interesting descriptions, theories and hypothesis rather than solid empirical data. The importance of a transition program for adolescents with JIA is widely recognized but the lack of solid data from studies to base the policy on is remarkable. Just very few studies have been published with data to support current programs (14). Most published studies evaluating transitional care have been for patients with diabetes mellitus, with programs targeted at improving patient education, staff continuity or delivery of service.

This existing evidence supports the use of educational programs, joint pediatric and adult clinics and specific young adult clinics. Evidence for patients with rheumatic disease however have not been published yet, most likely because outcome markers for these chronic diseases are rather complex, while in diabetes disease specific biochemical indicators like HbA1c are used.

When summarizing the most important needs for transition in rheumatology, the following key components can be distinguished(7;12;71):

- Medical care in the transition phase should be focused on the future of the adolescent patient, and centred around the young adult
- Health care should include parents as well as support health staff
- Start of the transitional process should be addressed at the start of the adolescence (11 – 14 years)
- The medical approach should be from a multidisciplinary perspective, and include both paediatric and adult services, as well as social workers and educational experts
- It should be a dynamic and flexible process in a resilient framework (ITP, Individual Transitional Plan)
    - Coordinated, uninterrupted health care
    - Appropriate for age and developmental stage
    - Include skills training for the young person in communication, decision making, assertiveness, self-management(72)
    - Make plans for the future (peer support including independent social life and social competencies, education, housing)
- Policy regarding contact after transfer to adult services
- Evaluation process: audit; regular review of policy; participation of young people and parent in evaluation and future development of the service
- Where possible, linking families to share information and experiences

Regarding the medical documentation and administrative transfer an electronic patient file will be very helpful. Important information is then always available for every health care provider. Wherever possible, during the visits, the patient can also ask for the recall of the summary of the appointments as well as their blood test results, therefore creating an excellent knowledge of disease.

Individualized transition plans (ITP) are important for a successful transfer to adult health care. Such plans need to incorporate items on the basic domain on organs and their function (pain, swelling, LOM), then activities of daily life (walking, sitting, standing, self hygiene) and participation in the society (walking to school, work, computer use, cooking, house-cleaning, relations); (adapted from the international classification of functioning (73)). The young person has to be trained in knowledge and skills during transition. The skills and knowledge can be prepared by the pediatric and adult health department workers including the specialist, but may also include and important support from parents and peers (healthy as well with a chronic disease) (15).

During the transition phase the ITP should be reviewed regularly by the transition coordinator. Omissions are easily identified and additional attention can be given to the patient.

And last but not least we need to include the patient's opinion and learn to listen to them. This is not as obvious as it seems, as illustrated by the experience of describing disease activity of psoriasis. Where doctors measure numbers of plaques and percentage of affected skin area, our (adolescent) patients only care about skin lesions in their faces. From their viewpoint it can be stated that only if facial lesions regress, there is significant disease improvement.

In order to create a substantial foundation based on factual data that results in a successful transfer in rheumatic diseases we need to define:

What is the best parameter to measure a successful transfer:

Would this be disease activity results, functional outcome or psychosocial parameters?

Furthermore, we need to determine which test (pediatric or adult version) will be used to measure the parameter in adolescent age.

When successful transfer is defined, research can be done to consider the right timing, for the individual patient, in a transition phase guided by both pediatric and adult carers with the inclusion of parents and peer support.

7. Acknowledgements

The authors received un unconditional grant from the Dutch Arthritis Association; Pfizer (formerly Wyeth) and Roche.

8. References

[1] Packham JC, Hall MA. Long-term follow-up of 246 adults with juvenile idiopathic arthritis: social function, relationships and sexual activity. Rheumatology (Oxford) 2002; 41(12):1440-1443.

[2] Packham JC, Hall MA. Long-term follow-up of 246 adults with juvenile idiopathic arthritis: functional outcome. Rheumatology (Oxford) 2002; 41(12):1428-1435.

[3] Minden K. Adult outcomes of patients with juvenile idiopathic arthritis. Horm Res 2009; 72 Suppl 1:20-25.

[4] Minden K, Niewerth M, Listing J, Biedermann T, Bollow M, Schontube M et al. Long-term outcome in patients with juvenile idiopathic arthritis. Arthritis Rheum 2002; 46(9):2392-2401.

[5] Blum RW. Introduction. Improving transition for adolescents with special health care needs from pediatric to adult-centered health care. Pediatrics 2002; 110(6 Pt 2):1301-1303.

[6] McDonagh JE, Southwood TR, Ryder CA. Bridging the gap in rheumatology. Ann Rheum Dis 2000; 59(2):86-93.

[7] White PH. Transition: a future promise for children and adolescents with special health care needs and disabilities. Rheum Dis Clin North Am 2002; 28(3):687-703, viii.

[8] Fleming E, Carter B, Gillibrand W. The transition of adolescents with diabetes from the children's health care service into the adult health care service: a review of the literature. J Clin Nurs 2002; 11(5):560-567.

[9] Schidlow DV, Fiel SB. Life beyond pediatrics. Transition of chronically ill adolescents from pediatric to adult health care systems. Med Clin North Am 1990; 74(5):1113-1120.

[10] Hardoff D, Chigier E. Developing community-based services for youth with disabilities. Pediatrician 1991; 18(2):157-162.

[11] While A, Forbes A, Ullman R, Lewis S, Mathes L, Griffiths P. Good practices that address continuity during transition from child to adult care: synthesis of the evidence. Child Care Health Dev 2004; 30(5):439-452.

[12] McDonagh JE. Young people first, juvenile idiopathic arthritis second: transitional care in rheumatology. Arthritis Rheum 2008; 59(8):1162-1170.

[13] Stinson JN, Toomey PC, Stevens BJ, Kagan S, Duffy CM, Huber A et al. Asking the experts: exploring the self-management needs of adolescents with arthritis. Arthritis Rheum 2008; 59(1):65-72.

[14] Crowley R, Wolfe I, Lock K, McKee M. Improving the transition between paediatric and adult healthcare: a systematic review. Arch Dis Child 2011; 96(6):548-553.

[15] Robertson LP, McDonagh JE, Southwood TR, Shaw KL. Growing up and moving on. A multicentre UK audit of the transfer of adolescents with juvenile idiopathic arthritis from paediatric to adult centred care. Ann Rheum Dis 2006; 65(1):74-80.

[16] Stinson J, McGrath P, Hodnett E, Feldman B, Duffy C, Huber A et al. Usability testing of an online self-management program for adolescents with juvenile idiopathic arthritis. J Med Internet Res 2010; 12(3):e30.

[17] Stinson JN, McGrath PJ, Hodnett ED, Feldman BM, Duffy CM, Huber AM et al. An internet-based self-management program with telephone support for adolescents with arthritis: a pilot randomized controlled trial. J Rheumatol 2010; 37(9):1944-1952.

[18] McDonagh JE. Transition of care from paediatric to adult rheumatology. Arch Dis Child 2007; 92(9):802-807.

[19] Flato B, Aasland A, Vinje O, Forre O. Outcome and predictive factors in juvenile rheumatoid arthritis and juvenile spondyloarthropathy. J Rheumatol 1998; 25(2):366-375.

[20] Oen K, Malleson PN, Cabral DA, Rosenberg AM, Petty RE, Cheang M. Disease course and outcome of juvenile rheumatoid arthritis in a multicenter cohort. J Rheumatol 2002; 29(9):1989-1999.

[21] Manners PJ, Bower C. Worldwide prevalence of juvenile arthritis why does it vary so much? J Rheumatol 2002; 29(7):1520-1530.

[22] Nordal E, Zak M, Aalto K, Berntson L, Fasth A, Herlin T et al. Juvenile idiopathic arthritis; Ongoing disease activity and changing categories in a long-term Nordic cohort study. Arthritis Rheum 2011.

[23] van der Kooij SM, Goekoop-Ruiterman YP, Vries-Bouwstra JK, Guler-Yuksel M, Zwinderman AH, Kerstens PJ et al. Drug-free remission, functioning and radiographic damage after 4 years of response-driven treatment in patients with recent-onset rheumatoid arthritis. Ann Rheum Dis 2009; 68(6):914-921.

[24] Soubrier M, Lukas C, Sibilia J, Fautrel B, Roux F, Gossec L et al. Disease activity score-driven therapy versus routine care in patients with recent-onset active rheumatoid arthritis: data from the GUEPARD trial and ESPOIR cohort. Ann Rheum Dis 2011; 70(4):611-615.

[25] Bakker MF, Jacobs JW, Welsing PM, Vreugdenhil SA, Booma-Frankfort C, Linn-Rasker SP et al. Early clinical response to treatment predicts 5-year outcome in RA patients: follow-up results from the CAMERA study. Ann Rheum Dis 2011; 70(6):1099-1103.

[26] Felson DT, Smolen JS, Wells G, Zhang B, van Tuyl LH, Funovits J et al. American College of Rheumatology/European League Against Rheumatism provisional definition of remission in rheumatoid arthritis for clinical trials. Arthritis Rheum 2011; 63(3):573-586.

[27] Levinson JE, Wallace CA. Dismantling the pyramid. J Rheumatol Suppl 1992; 33:6-10.

[28] Reiff A, Shaham B, Wood BP, Bernstein BH, Stanley P, Szer IS. High dose methotrexate in the treatment of refractory juvenile rheumatoid arthritis. Clin Exp Rheumatol 1995; 13(1):113-118.

[29] Ravelli A, Viola S, Ramenghi B, Di Fuccia G, Ruperto N, Zonta L et al. Evaluation of response to methotrexate by a functional index in juvenile chronic arthritis. Clin Rheumatol 1995; 14(3):322-326.

[30] Gedalia A, Barash J, Press J, Buskila D. Sulphasalazine in the treatment of pauciarticular-onset juvenile chronic arthritis. Clin Rheumatol 1993; 12(4):511-514.

[31] van Rossum MA, Fiselier TJ, Franssen MJ, Zwinderman AH, ten Cate R, Suijlekom-Smit LW et al. Sulfasalazine in the treatment of juvenile chronic arthritis: a randomized, double-blind, placebo-controlled, multicenter study. Dutch Juvenile Chronic Arthritis Study Group. Arthritis Rheum 1998; 41(5):808-816.

[32] Wallace CA, Ruperto N, Giannini E. Preliminary criteria for clinical remission for select categories of juvenile idiopathic arthritis. J Rheumatol 2004; 31(11):2290-2294.

[33] Lovell DJ, Giannini EH, Reiff A, Cawkwell GD, Silverman ED, Nocton JJ et al. Etanercept in children with polyarticular juvenile rheumatoid arthritis. Pediatric Rheumatology Collaborative Study Group. N Engl J Med 2000; 342(11):763-769.

[34] Kroll T, Barlow JH, Shaw K. Treatment adherence in juvenile rheumatoid arthritis--a review. Scand J Rheumatol 1999; 28(1):10-18.

[35] Rapoff MA, Belmont JM, Lindsley CB, Olson NY. Electronically monitored adherence to medications by newly diagnosed patients with juvenile rheumatoid arthritis. Arthritis Rheum 2005; 53(6):905-910.

[36] Gerhardt CA, McGoron KD, Vannatta K, McNamara KA, Taylor J, Passo M et al. Educational and occupational outcomes among young adults with juvenile idiopathic arthritis. Arthritis Rheum 2008; 59(10):1385-1391.

[37] Foster HE, Marshall N, Myers A, Dunkley P, Griffiths ID. Outcome in adults with juvenile idiopathic arthritis: a quality of life study. Arthritis Rheum 2003; 48(3):767-775.

[38] Packham JC, Hall MA. Long-term follow-up of 246 adults with juvenile idiopathic arthritis: education and employment. Rheumatology (Oxford) 2002; 41(12):1436-1439.

[39] LeBovidge JS, Lavigne JV, Donenberg GR, Miller ML. Psychological adjustment of children and adolescents with chronic arthritis: a meta-analytic review. J Pediatr Psychol 2003; 28(1):29-39.

[40] Huygen AC, Kuis W, Sinnema G. Psychological, behavioural, and social adjustment in children and adolescents with juvenile chronic arthritis. Ann Rheum Dis 2000; 59(4):276-282.

[41] Ostile IL, Johansson I, Aasland A, Flato B, Moller A. Self-rated physical and psychosocial health in a cohort of young adults with juvenile idiopathic arthritis. Scand J Rheumatol 2010; 39(4):318-325.

[42] David J, Cooper C, Hickey L, Lloyd J, Dore C, McCullough C et al. The functional and psychological outcomes of juvenile chronic arthritis in young adulthood. Br J Rheumatol 1994; 33(9):876-881.

[43] Packham JC, Hall MA, Pimm TJ. Long-term follow-up of 246 adults with juvenile idiopathic arthritis: predictive factors for mood and pain. Rheumatology (Oxford) 2002; 41(12):1444-1449.

[44] Oen K. Long-term outcomes and predictors of outcomes for patients with juvenile idiopathic arthritis. Best Pract Res Clin Rheumatol 2002; 16(3):347-360.

[45] Bloom BJ, Smith P, Alario AJ. Felty syndrome complicating juvenile rheumatoid arthritis. J Pediatr Hematol Oncol 1998; 20(5):511-513.

[46] Minden K. Adult outcomes of patients with juvenile idiopathic arthritis. Horm Res 2009; 72 Suppl 1:20-25.

[47] Packham JC, Hall MA. Long-term follow-up of 246 adults with juvenile idiopathic arthritis: functional outcome. Rheumatology (Oxford) 2002; 41(12):1428-1435.

[48] Souza LS, Machado SH, Brenol CV, Brenol JC, Xavier RM. Growth velocity and interleukin 6 concentrations in juvenile idiopathic arthritis. J Rheumatol 2008; 35(11):2265-2271.

[49] Simon D. Puberty in chronically diseased patients. Horm Res 2002; 57 Suppl 2:53-56.

[50] Souza L, Machado SH, Bredemeier M, Brenol JC, Xavier RM. Effect of inflammatory activity and glucocorticoid [corrected] use on nutritional variables in patients with juvenile idiopathic arthritis. J Rheumatol 2006; 33(3):601-608.

[51] De Benedetti F, Meazza C, Martini A. Role of interleukin-6 in growth failure: an animal model. Horm Res 2002; 58 Suppl 1:24-27.

[52] Peterson LS, Mason T, Nelson AM, O'Fallon WM, Gabriel SE. Psychosocial outcomes and health status of adults who have had juvenile rheumatoid arthritis: a controlled, population-based study. Arthritis Rheum 1997; 40(12):2235-2240.

[53] Ostensen M. Pregnancy in patients with a history of juvenile rheumatoid arthritis. Arthritis Rheum 1991; 34(7):881-887.

[54] Rosen DS, Blum RW, Britto M, Sawyer SM, Siegel DM. Transition to adult health care for adolescents and young adults with chronic conditions: position paper of the Society for Adolescent Medicine. J Adolesc Health 2003; 33(4):309-311.

[55] White PH. On the road to adulthood for youth with rheumatic diseases: what health care professionals can do. Arthritis Rheum 2008; 59(8):1054-1057.

[56] Shaw KL, Southwood TR, McDonagh JE. User perspectives of transitional care for adolescents with juvenile idiopathic arthritis. Rheumatology (Oxford) 2004; 43(6):770-778.

[57] McDonagh JE, Southwood TR, Shaw KL. Unmet education and training needs of rheumatology health professionals in adolescent health and transitional care. Rheumatology (Oxford) 2004; 43(6):737-743.

[58] Petty RE, Southwood TR, Manners P, Baum J, Glass DN, Goldenberg J et al. International League of Associations for Rheumatology classification of juvenile idiopathic arthritis: second revision, Edmonton, 2001. J Rheumatol 2004; 31(2):390-392.

[59] Combe B, Landewe R, Lukas C, Bolosiu HD, Breedveld F, Dougados M et al. EULAR recommendations for the management of early arthritis: report of a task force of the European Standing Committee for International Clinical Studies Including Therapeutics (ESCISIT). Ann Rheum Dis 2007; 66(1):34-45.

[60] Giannini EH, Ruperto N, Ravelli A, Lovell DJ, Felson DT, Martini A. Preliminary definition of improvement in juvenile arthritis. Arthritis Rheum 1997; 40(7):1202-1209.

[61] Prevoo ML, 't Hof MA, Kuper HH, van Leeuwen MA, van de Putte LB, van Riel PL. Modified disease activity scores that include twenty-eight-joint counts. Development and validation in a prospective longitudinal study of patients with rheumatoid arthritis. Arthritis Rheum 1995; 38(1):44-48.

[62] van der Heijde DM, 't Hof MA, van Riel PL, Theunisse LA, Lubberts EW, van Leeuwen MA et al. Judging disease activity in clinical practice in rheumatoid arthritis: first step in the development of a disease activity score. Ann Rheum Dis 1990; 49(11):916-920.

[63] van Pelt PA, Kruize AA, Goren SS, van der NJ, Uiterwaal CS, Kuis W et al. Transition of rheumatologic care, from teenager to adult: which health assessment questionnaire can be best used? Clin Exp Rheumatol 2010; 28(2):281-286.

[64] Filocamo G, Consolaro A, Schiappapietra B, Dalpra S, Lattanzi B, Magni-Manzoni S et al. A new approach to clinical care of juvenile idiopathic arthritis: the Juvenile Arthritis Multidimensional Assessment Report. J Rheumatol 2011; 38(5):938-953.

[65] Chamberlain MA, Kent RM. The needs of young people with disabilities in transition from paediatric to adult services. Eura Medicophys 2005; 41(2):111-123.

[66] McDonagh JE, Shaw KL, Southwood TR. Growing up and moving on in rheumatology: development and preliminary evaluation of a transitional care programme for a multicentre cohort of adolescents with juvenile idiopathic arthritis. J Child Health Care 2006; 10(1):22-42.

[67] Rettig P, Athreya BH. Adolescents with chronic disease. Transition to adult health care. Arthritis Care Res 1991; 4(4):174-180.

[68] Tucker LB, Cabral DA. Transition of the adolescent patient with rheumatic disease: issues to consider. Pediatr Clin North Am 2005; 52(2):641-52, viii.

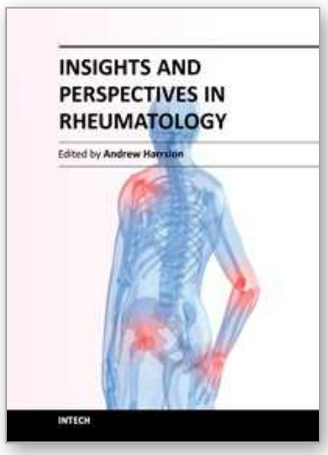
[69] Beresford B. On the road to nowhere? Young disabled people and transition. Child Care Health Dev 2004; 30(6):581-587.

[70] KyngAs HA, Kroll T, Duffy ME. Compliance in adolescents with chronic diseases: a review. J Adolesc Health 2000; 26(6):379-388.

[71] Scal P, Evans T, Blozis S, Okinow N, Blum R. Trends in transition from pediatric to adult health care services for young adults with chronic conditions. J Adolesc Health 1999; 24(4):259-264.

[72] Olsen DG, Swigonski NL. Transition to adulthood: the important role of the pediatrician. Pediatrics 2004; 113(3 Pt 1):e159-e162.

[73] World Health Organization. International classification of functioning, disability and health: ICF. Geneva: World Health Organization; 2001. Ref Type: Generic



Insights and Perspectives in Rheumatology

Edited by Dr. Andrew Harrison

ISBN 978-953-307-846-5
Hard cover, 274 pages
Publisher InTech
Published online 13, January, 2012
Published in print edition January, 2012

This book offers a range of perspectives on pathogenesis, clinical features and treatment of different rheumatic diseases, with a particular focus on some of the interesting aspects of Sjögren's syndrome. It contains detailed and thorough reviews by international experts, with a diverse range of academic backgrounds. It will also serve as a useful source of information for anyone with a passive interest in rheumatology, from the genetic and molecular level, through to the psychological impact of pain and disability.

INTECH
open science | open minds

InTech Europe
University Campus STeP Ri
Slavka Krautzeka 83/A
51000 Rijeka, Croatia
Phone: +385 (51) 770 447
Fax: +385 (51) 686 166
www.intechopen.com

InTech China
Unit 405, Office Block, Hotel Equatorial Shanghai
No.65, Yan An Road (West), Shanghai, 200040, China
中国上海市延安西路65号上海国际贵都大饭店办公楼405单元
Phone: +86-21-62489820
Fax: +86-21-62489821

IntechOpen