# SEXUALLY ACQUIRED REACTIVE ARTHRITIS (SARA)

**KEY POINTS**

- Any acutely swollen/red/hot joint needs to be discussed with GU Doctor of the Day
- Treat the underlying STI with a standard course of antibiotics for the identified infection
- An MDT approach should be adopted for diagnosis and management. This may include liaison with rheumatology, ophthalmology, dermatology and microbiology.

## Definition:

Reactive arthritis is a sterile inflammation of a joint triggered by an infection at a distant site which is usually a gastrointestinal infection (e.g. *Salmonella*, *Shigella*, *Campylobacter*), or a sexually transmitted infection (STI), when it is termed "sexually acquired reactive arthritis" (SARA).

It is common for structures in the eye to also become inflamed and in the past the classical triad of urethritis, arthritis and conjunctivitis was termed "Reiter's syndrome". However, the majority of patients do not present with the classical triad and the term "Reiter's syndrome" is outdated and no longer used in clinical practice.

**Septic arthritis is a separate entity and is a medical emergency which requires urgent admission to hospital.**

## Pathogenesis

The precise mechanisms linking STIs and SARA is not well understood, and it is it not clear why some individuals develop SARA as a result of an STI and others do not.

Objective signs of SARA are seen in 0.8-4.0% of cases of urethritis and cervicitis.

## Causes:

STIs with a link to SARA include:

- Chlamydia (including LGV) – this is the STI with the strongest association with SARA
- Gonorrhoea – this can cause SARA or septic arthritis
- Mycoplasma genitalium – new evidence suggests a link with SARA
- Ureaplasma urealyticum – some case reports of it causing SARA but a causal link has not been confirmed
- Shigella – this can be acquired sexually (e.g. through "rimming") and therefore although it causes a gastrointestinal infection, it can also be considered to be a sexually acquired cause of reactive arthritis

## Risk Factors:

SARA is up to 10x more common in men than in women.

SARA may be 50x more common in people with the HLA-B27 gene. People with gene are also more likely to have other seronegative spondylarthropathies (e.g. ankylosing spondylitis, psoriatic arthritis or inflammatory bowel disease associated arthritis).

Some reports suggest that SARA is more common in the sub-Saharan HIV positive population.

## Symptoms and Signs

There is usually a history of sexual intercourse with a new partner within 3 months of the onset of the arthritis symptoms.

Genital symptoms occur an average of 14 days before the arthritis symptoms.

There may be a past history or family history of iritis or other seronegative spondylarthropathies (e.g. ankylosing spondylitis, psoriatic arthritis or inflammatory bowel disease associated arthritis).

**Constitutional symptoms:**

- Non-specific systemic symptoms of malaise, fatigue, weight loss, and fever are common

**Genital infection symptoms/signs:**

- Symptoms and signs of an underlying STI (e.g. discharge, dysuria, dyspareunia, altered bleeding in women etc.) may be present, however the genital infection can also be asymptomatic.
- Circinate balanitis or vulvitis are present in 14-40% of patients

**Joint symptoms/signs:**

- Usually 1-5 joints affected in an asymmetrical pattern, most commonly involving the lower limbs (kness, ankles, feet).
- Swelling, tenderness, morning stiffness, night-time pain are all common in the affected joints.
- Achilles tendonitis and/or plantar fasciitis occur in 20-40%
- Swollen fingers or toes (dactylitis) occur in 16%
- Lower back pain (sacroiliitis) in 10%

**Eye symptoms/signs:**

- Irritable and red eyes with photophobia may occur with conjunctivitis (affecting 20-50%) or iritis (affecting 2-11%)
- Rarely uveitis can develop and cause disturbance of visual acuity and eyeball pain
- Other rare eye involvement can include: corneal ulceration, keratitis, intra-ocular haemorrhage, optic neuritis, and posterior uveitis.

**Other rare symptoms/signs:**

- Skin involvement: psoriasiform eruptions (12%), keratoderma blennorrhagica (5-33%), oral ulceration, geographical tongue and nail dystrophy have all been reported.
- Cardiovascular: tachycardia, left ventricular dilatation, aortic valve disease, cardiac conduction delays, thrombophlebitis
- Renal: proteinuria, microscopic haematuria, aseptic pyuria, glomerulonephritis
- Neurological: cranial nerve palsies, meningoencephalitis

## Diagnosis

There are no specific tests or diagnostic criteria for SARA. The diagnosis is based on clinical findings (i.e. evidence of an STI with evidence of joint/eye/skin involvement as outlined above.)

All patients should have a thorough history and examination as well as a comprehensive sexual health screen as follows:

**Male genital samples:**

- Urine NAAT for C. trachomatis and N. gonorrhoeae
- Urethral gram stained smear (if urethral symptoms)
- Urethral culture and sensitivity testing for N. gonorrhoeae (if urethral symptoms)

**Female genital samples:**

- Vulvovaginal NAAT for C. trachomatis and N. gonorrhoeae
- Endocervical culture and sensitivity testing for N. gonorrhoeae (if microscopy or NAAT positive)

**Genital samples in trans people:**

- Urine NAAT for C. trachomatis and N. gonorrhoeae in all patients
- If the patient has a vagina (including post genital reconstruction surgery) and is using it for sex, vulvovaginal NAAT for C. trachomatis and N. gonorrhoeae
- Urethral and/or endocervical gram stained smear and culture for N. gonorrhoeae as appropriate (depending on symptoms, genital configuration and any reconstructive surgery)

**Samples in both men and women:**

- Pharyngeal and rectal NAAT samples for C. trachomatis and N. gonorrhoeae where indicated by the sexual history and symptoms.
- Screening for HIV and syphilis
- Screening for hepatitis B and C based on risk factors in the sexual history
- Consider M. genitalium NAAT (urine in men/vulvovaginal sample in women)

**Other useful tests that should be considered for everyone:**

- FBC
- CRP or ESR
- Urinalysis
- Any individual with eye symptoms should undergo formal slit-lamp examination

**Further investigations which may be considered after MDT discussion:**

- Biochemistry: LFTs, U+Es
- Microbiology: blood cultures, stool cultures, synovial fluid aspirate for cell count, gram stain crystals and culture (to exclude septic arthritis and gout)
- Radiology: X-rays of affected joints, US of affected joints/tendons, MRI of sacroiliac joints and spine
- Others: HLA-B27 gene testing, ECG, ECHO, Synovial biopsy, CXR, Exclusion tests for other rheumatological diseases (e.g. anti-CCP, autoantibodies, urate, RF, ANA, ACE)

## Management:

### General considerations

Any patient with an acutely swollen/red/hot joint should be discussed with GU Doctor of the Day.

An MDT approach should be adopted. This may include liaison with rheumatology, ophthalmology, dermatology and microbiology.

An urgent hospital admission may be required if the patient is systemically unwell and/or to rule out septic arthritis. If patient needs acute admission, phone the 1st on medical registrar in the appropriate hospital. (QEUH switchboard: 0141 201 1100; GRI switchboard: 0141 211 4000; RAH switchboard: 0141 887 9111; IRH switchboard: 01475 633 777).

Most cases are self-limiting although symptoms can last up to 6 months and 50% of patients will have relapsing/recurrent symptoms.

All patients should be given a detailed explanation of the diagnosis including written information.

All patients should be advised to abstain from all sexual contact until they and their partner(s) have completed treatment and follow up.

Patients should be advised to avoid potentially 'triggering infections' in the future such as gastro-intestinal infections or further STIs. Therefore, safer sexual practice and the importance of food hygiene should be discussed.

### Genital infection

- Treat the underlying STI with a standard course of antibiotics for the identified infection – see specific guidelines for the identified STI or discuss with the GU Doctor of the Day if no STI is identified.

### Joint symptoms

- Rest
- NSAIDs are the mainstay of treatment and should be considered for every patient (however they should be avoided in those with asthma, those at risk of GI bleeding, those with cardiac/renal impairment and in pregnancy). Consider gastric protection with a PPI (e.g. Omeprazole) or a COX-2 inhibitor for those at high risk of GI bleeding. No NSAID has proven benefit over another for SARA. NSAIDs should be used for the possible shortest duration.
- Consider referral for physiotherapy
- For those not requiring hospital admission, send an urgent SCI gateway referral to the Rheumatology team at the patient's local hospital; or call the Rheumatology team for advice (switchboard numbers as above). Second line treatments under the care of the Rheumatologists may include intra-articular or systemic corticosteroids, sulphasalazine, methotrexate, azathioprine and infliximab.
- **Pregnancy and breast-feeding require special attention regarding therapeutic decisions – refer to appropriate specialist and liaise with the Obstetrics team.**

### Skin and mucous membrane symptoms

- No treatment is required for mild symptoms
- Those with moderate/severe symptoms should be referred to their local Dermatology team who may consider keratinolytic agents, vitamin D3 analogues, salicylic acid ointments, retinoids and topical steroids.

**Eye symptoms**

- Refer urgently to ophthalmology for slit-lamp examination: treatment of uveitis is likely to include corticosteroid eye drops and mydriatics to avoid cataract formation. (Gartnavel General Hospital, Glasgow, Eye Dept – 0141 301 7847 direct booking to emergency clinic (Mon-Sat 0830-1700)
- Eye problems in the Clyde area should be sent to Ophthalmology out patients at the RAH between 9am and 5pm. Out of hours, refer to A&E. RAH: 0141 887 9111 (switchboard number)
- In Inverclyde, eye problems should go at all times to A&E from where the appropriate Ophthalmologist will be contacted.

**Post inflammatory pain and fatigue**

- Explanation and patience
- Low dose tricyclic anti-depressants, such as Amitriptyline 10-25 mg nocte can be considered

## Partner Notification and Look Back Period:

Dependent on the genital infection diagnosed – see guidelines for the relevant infection.

All patients should be advised to abstain from all sexual contact until they and their partner(s) have completed treatment and follow up.

## Follow up:

Dependent on the genital infection identified.

Extragenital manifestations should be followed up under relevant specialist

## References:

European Guideline on the management of sexually acquired reactive arthritis 2014 https://iusti.org/regions/Europe/pdf/2014/IntJSTD_AIDS-2014-Carlin-901-12.pdf [Accessed June 2019]

BASHH United Kingdom National Guideline on the Management of Sexually Acquired Reactive Arthritis 2021 https://www.bashhguidelines.org/media/1274/sara-2021.pdf [Accessed June 2021]