AUTOIMMUNE DISEASE & EXERCISE

PUBLIC

BACKGROUND

The role of the immune system is to protect us and keep us healthy. If infectious agents such as bacteria or viruses get into our body, immune cells usually kill or overwhelm them, removing the infection or disease. This is known as the immune response. An autoimmune disease is when the immune system fails to recognize self from non-self, is chronically overactive, and mistakenly attacks its own healthy cells. Autoimmune rheumatic diseases (ARDs) are a group of systemic autoimmune disorders that mainly affect joints, bones and soft tissues and are associated with substantial morbidity and mortality (1). Rheumatoid arthritis (RA), systemic lupus erythematosus (SLE), idiopathic inflammatory myopathies (IIM), systemic sclerosis (SSc), and ankylosing spondylitis (AS) are autoimmune diseases that have been strongly related to sustained inflammation, and share common clinical features including periodic pain, chronic fatigue, depression, and, consequently, reduced physical activity and poor health-related quality of life (2).

TYPES OF AUTOIMMUNE DISEASE

There are more than 80 types of autoimmune diseases, with over half of them being considered rare. The overall estimated prevalence is 4.5%, with 2.7% for males and 6.4% for females, being more common in females and running in families (3). An autoimmune disease can either be organ-specific or systemic (4). There is an autoimmune disease specific for nearly every organ in the body, usually involving response to an antigen expressed only in that organ. Some organ-specific autoimmune diseases include celiac disease, gastritis, graves' disease, type 1 diabetes, and multiple sclerosis. In other autoimmune diseases the response seems to be directed against antigens that are widely expressed throughout the body (4). Some examples of systemic autoimmune diseases include systemic lupus erythematosus, systemic sclerosis, rheumatoid arthritis, and polymyositis.

HOW CAN EXERCISE HELP?

Regular exercise appears to be safe and beneficial at a moderate intensity in modulating some of the most concerning symptoms, such as fatigue in people with SLE (5, 6), SSc (7), RA (8) and MS (9). Fatigue is a commonly reported symptom experienced by people living with SSc (10) and SLE (11), affecting up to 80% of SLE patients (12). Regular exercise training may lead to anti-inflammatory benefits in chronic diseases with systemic low-grade inflammation (i.e. type 2 diabetes) by reducing inflammatory markers (2), and is regarded as a valuable self-care intervention . Given the potential role of inflammation in the etiology and clinical symptoms of SLE, SSc, RA, and other autoimmune diseases, including pain, redness and swelling, it is postulated that exercise training, if able to alleviate the inflammatory process, could also be helpful in treating the symptoms related to inflammation in this population (2).

Aerobic training combined with strength training is recommended as routine practice in patients with RA (13), with improvements in aerobic capacity, physical function, and fatigue (8). Exercise can be just as safe for people with an autoimmune disease as it is for people without, if there is a good understanding of the disease, symptoms, any side effects to medications, and the person. It is important if you have an autoimmune disease, your exercise program is supervised by physiotherapists and accredited exercise physiologists who are able to tailor the exercise program to your individual needs (14).

Exercise is known to reduce fatigue and pain, in addition to improving quality of life, cardiovascular fitness, functional strength, independence and the ability to perform activities of daily living.

PHYSICAL INACTIVITY AND BARRIERS TO EXERCISE

Physical inactivity and sedentary behaviour are highly prevalent in individuals with ARDs, with current estimates indicating around 60% of individuals with an ARD do not achieve the recommended amount of weekly PA [i.e., 150 min/week of moderate to-vigorous physical activity (1)], and sedentary time ranges between 8.3–14.0 hours/day, which is higher than for the general population (15). Physical inactivity in ARDs may be related to generic and disease-related barriers to physical activity, such as lack of time and motivation, high costs and limited access to specialized facilities, pain, fatigue, fear of aggravating the disease, among others (1). Joint stiffness and contractures, shortness of breath, fatigue, and pain have been identified as barriers for people with SSc to engage in exercise (16).

EXERCISE CONSIDERATIONS

You may have 'good days' and 'bad days' with your autoimmune disease, and there will be times when you will feel better and other times when you will have increased symptoms. This is often referred to as remission and/or flare-up. For some, the illness can be mild, and symptoms appear to go away, whilst for others the symptoms can impact on their life considerably and require specialised treatment. Common treatments include different types of medication, which can compromise your immune system and make your body more prone to infection. It is important to ensure proper hygiene practices are in place during exercise, and that adequate rest is provided where needed.

Every autoimmune disease presents differently, and therefore there is no 'one size fits all' approach to exercise.

EXERCISE SUGGESTIONS

- "Sit less and move more" is a simple and appropriate strategy to ensure long-term adherence (17).
- Home-based physical activity is a sensible approach to maintain levels of physical activity, without the need to commute (1).
- Exercise should be long-term and sustainable so that you can create long lasting habits and positive lifestyle changes.
- Exercise should be structured and follow a gradual and graded approach to ensure you are safe when commencing exercise programs.
- Exercise should be supervised and/or monitored by a team of allied health professionals who understand autoimmune disease so they can understand your needs.
- Exercise should be comfortable and enjoyable, with adequate rest breaks when needed, and paced appropriately to avoid making the disease symptoms worse.

RELATED INFORMATION AND REFERENCES

Exercise is Medicine Australia www.exerciseismedicine.org.au

Exercise Right www.exerciseright.com.au

Find a Physiotherapist www.choose.physio

Find an Accredited Exercise Physiologist www.essa.org.au

Endometriosis Australia https://www.endometriosisaustralia.org/

If you have any concerns about the safety of your patient in commencing an exercise program, please consider referral to a Sport and Exercise Physician.

Find a Sport and Exercise Physician www.acsep.org.au/

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