Norfolk Arthritis Register

2012 Newsletter

The 2012 NOAR Newsletter is an update on the work of the Norfolk Arthritis Register over the last two years, and it follows on from the publication of the 20th Anniversary NOAR Results Booklet in 2010/2011 which described the work of NOAR since 1990. If you would like a copy of this booklet it is still available on our website, or we can print off a copy and send it to you, as well as any copies of the papers mentioned in this Newsletter. Our contact details are:

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Once again we would like to thank everyone who has helped with the NOAR study; the findings have been invaluable in improving the knowledge we have of inflammatory polyarthritis (IP) and how it affects the lives of people living with this condition.

Current Work

Recruitment and follow-up

Now in its 22nd year, NOAR continues to recruit and follow people who develop Inflammatory Polyarthritis (IP). However, we have made some changes, in that we are only recruiting people who are registered with those GP Practices which are also taking part in the EPIC Study. The length of follow-up has also changed, with people being followed for just two years if they joined us since 2009. NOAR participants who joined us before 2009 will know that we are following them for much longer - anything up to 20 years for those people recruited in the early 1990's.

Cardiovascular Study

Recruitment for this study was completed in 2009 with nearly 400 people consenting to take part. We have completed all of the 2nd year scans and we are now carrying out the 5th year scans. We also recruited 119 healthy controls in 2009/2010 for this study.

Link with EPIC

We are continuing to develop our links with this study group to further investigate whether we can identify the causes of IP.

Staff

There are two staff changes: firstly Karen Durrant joined the team as the NOAR Administrator at the beginning of 2011. Karen is responsible for the day-to-day running of the NOAR office and is the first point of contact for any queries regarding appointments.

Secondly, February 2012 sees the departure of Diane Bunn, the Clinical Manager, who leaves NOAR after 21 years. She is moving to the UEA to work on another project. Jackie Chipping, the Deputy Manager, will take over temporarily until a new manager is appointed.

Age, Gender and Hormonal Influences

A series of papers looking at the impact of gender, pregnancy, and the oral contraceptive pill (OCP) on outcome in people who have developed Inflammatory Polyarthritis (IP) were published in 2011. The first paper looked at age and gender differences over the NOAR cohort. Women had greater problems with function than men, from shortly after symptom onset. However, in both sexes it was noted that disease progression occurred more quickly if symptoms of arthritis commenced at an older age, particularly in the over 75 age-group.

Camacho et al, 2011 (1)

Subsequent papers looked at the effect of pregnancy on the severity of disability. Women who had ever had a pregnancy had less disability than those women who had never become pregnant; and furthermore, those women who became pregnant after developing IP were less disabled than women who had not become pregnant after developing IP. Another factor which was observed is that women who gave birth to healthy babies also had better arthritis outcomes than women who suffered a number of miscarriages or stillbirths.

Camacho et al, 2011 (2); Camacho et al, 2011 (3)

Another finding to come from this group of papers was that women who had used the OCP, either prior to, or at around the time that IP symptoms developed, generally had better function than women who had not used the OCP in the same time periods. It is unclear what the underlying reasons are for these observations and further work is required to investigate the possible relationships which have been identified between the hormonal effects of pregnancy and OCP use and long-term outcomes in IP. These findings have important implications for the way in which people are treated when they first present to their doctors with symptoms.

Camacho et al, 2011 (4)

Genetic Studies

Genetic studies have shown that the TRAF1/C5 locus (genes) may be associated with predicting whether erosions will develop. Although a group of 1,049 NOAR participants were included in this analysis, this is still a small number in genetic analysis terms, and so the results need replicating in larger cohorts before it becomes a useful test in clinical practice.

Also, the presence of serum anti-citrullinated antibodies (ACPA) at baseline have been shown to be good predictors of development and severity of radiological erosions at 1 and 5 years. This provides further supporting evidence that this is a useful test for people who have recently developed IP.

Plant, Thomson et al, 2010

Methotrexate is the drug most often used to treat people with IP because of its efficacy in the majority of people. However, there is a small, but significant, group of people who do not respond well to this medication and who find that other medications work better for them. A number of studies are being conducted to try and answer these questions, including the RAMS Study, which some of the NOAR participants are taking part in.

In NOAR, an early analysis has shown that the OLIG3/TNFAIP3 and PTPN22 genes, were associated with people who stopped methotrexate within the first 12 months. This is a preliminary finding, as a considerable number of genes were studied in order to identify these. In addition, the numbers were small, so the studies need to be repeated in a larger group before we are confident that these findings are strong enough to be used in routine clinical practice.

Plant, Farragher et al, 2010

Funding

NOAR continues to receive its core funding from Arthritis Research UK, the leading medical charity for research into musculoskeletal disorders.

Further information about arthritis and other musculoskeletal conditions can be found on their website: www.arthritisresearchuk.org.

Bone loss

It is known that people with Inflammatory Polyarthritis have an increased risk of developing osteoporosis. In a study reported in 2010, 108 women who had taken part in NOAR for 10 years completed an extra questionnaire about bone health as well as attending the NNUH for a bone densitometry (DXA) scan. The findings from this study showed that those women who had cumulative disease damage had greater bone loss. The findings demonstrate a need to prevent debilitating damage from occurring, so that additional adverse outcomes can be prevented.

Pye, Marshall et al, 2010

A second paper investigated whether routine hand x-rays, which are taken regularly to monitor joint damage, could also be used to detect bone loss using Digital X-ray Radiogrammetry, DXR. This study looked at a group of 204 women who had hand x-rays taken for NOAR at two timepoints within the first five years of the study. It was found that people with more severe disease had greater bone loss. This method of detecting bone loss is just being developed, and these results are encouraging.

Pye, Adams et al, 2010

Cardiovascular Study

A major focus for NOAR over the past few years has been to investigate the impact of having IP on cardiovascular health. In a 2011 paper, insulin resistance was found to be more common in people with IP, especially if they were positive for rheumatoid factor and/or anti-citrullinated antibodies (ACPA).

Insulin is a hormone produced in the pancreas which helps the body use glucose for energy. Insulin resistance occurs when insulin is produced, but the body does not use it effectively by becoming 'resistant' to it. This happens over a prolonged period of time, but is known to be linked to obesity and the development of type 2 diabetes and cardiovascular disease (CVD).

Therefore, if insulin resistance is more common in people with IP, this may be one reason behind the increase in CVD seen in this group. *Mirjafari et al, 2011*

Early Treatment

Inflammatory Polyarthritis is a chronic long-term condition with varying outcomes. A number of NOAR papers have shown that the long-term outcomes for people with IP are improved and sustained if treatment with Disease Modifying Drugs (DMARD's) is started early in the disease process. *Farragher, Lunt, Fu et al, 2010; Scire et al, 2011*

For people who are developing a chronic condition, it is important to try and distinguish between those who are likely to have a more severe form of arthritis and those who have milder symptoms. This is because there are a number of different medications available and the aim is to treat each individual person with the most appropriate treatment for them. Past NOAR papers have shown that the presence of rheumatoid factor is a strong predictor of poorer outcome. More recent papers have shown that people who are ACPA positive also tend to be have poorer outcomes, suggesting that this group of people should be more closely monitored and treatments adjusted if indicated.

Farragher, Lunt, Plant et al, 2010

A further paper in this area showed that younger patients who were ACPA positive *and* who had a poor response to a DMARD were more likely to need biologics therapy. *Verstappen, et al, 2011*