

**Video abstract transcript****Central Obesity in Axial Spondyloarthritis: The Missing Link to Understanding Worse Outcomes in Women?**

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**Cover Slide**

Hello my name is Sienad Maguire and thank you to The Journal of Rheumatology for inviting me to discuss our paper entitled "Central Obesity in Axial Spondyloarthritis: The Missing Link to Understanding Worse Outcomes in Women?" on behalf of myself and coauthors.

**Slide 1:**

In axial Spondyloarthritis (axSpA) obesity is known to be associated with higher levels of disease activity and decreased response to treatment. This is due to secretion of adipocytokines from adipose tissue which create a persistent systemic inflammatory state. Unfortunately obesity remains a commonly encountered comorbidity in axSpA.

Central obesity can be detected by calculation of the waist to hip ratio and is known to be associated with increased risk of CV death, type II DM and premature death. In the general population it is more common in males, but there is limited data on central obesity in axSpA.

**Slide 2:**

The aim of this study was to determine firstly the prevalence of central obesity in AxSpA and its effect on disease related outcomes. Secondly to determine how this differs between sexes.

**Slide 3:**

To do this we extracted data from the Ankylosing Spondylitis Registry of Ireland (ASRI) which is a large national registry of patients with axSpA recruited from all major geographic regions of the country. All patients must have been diagnosed with axSpA by a rheumatologist and meet the 2009 ASAS criteria for axSpA at the time of enrolment.

**Slide 4:**

Physical measurements for all eligible patients were compared on the basis of obesity classification using two commonly used anthropometric measures: the body mass index (BMI) and the waist to hip ratio (WHR). A series of comparison analyses compared patient outcomes on the basis of sex and presence of central obesity. These variables were then compared as part of a multivariate analysis to assess the impact of these variables on the following patient outcomes.

**Slide 5:**

At the time of data extraction physical measurements were available for 753 participants enrolled in the ASRI. Of which 71.4% were male and 27.6% were female. In total 29.6% of patients were obese based on BMI, while 41.2% were obese as per the WHR.

I want to draw your attention to average BMI scores circled in red in the table on your screen, you'll notice there was no significant difference in mean BMI between males and females in our AxSpA cohort. However, males were found to have significantly higher mean WHR compared to AxSpA women.

**Slide 6:**

We then compared weight classification using these two anthropometric measures. And you'll see in your screen if we look at the results for BMI there is no significant difference between males and females for prevalence of obesity. But if we look at WHR at the top of the graph, there is a significantly higher prevalence of females with central obesity compared to males.

We then went on to compare the patient outcome scores for patients on the basis of presence of central obesity. We found that those who were central obese reported higher mean outcome scores compared to those without. So we have demonstrated that central obesity is more prevalent in AxSpA females and that central obesity is associated with worse outcome scores.

To look at this in more detail we carried out a multivariate analysis to see if there was an interaction between sex and presence of central obesity. Although this did not reach significance, the main effect of both sex and central obesity did have significant main effects on patient outcomes when assessed individually.

A follow up univariate analysis examined the effect of central obesity on numerous patient outcome scores and found that this was significant for ASQoL, BASFI and HAQ with a non significant trend towards and effect in Basdai as well.

**Slide 7:**

This analysis was novel in a few different aspects. Firstly, it demonstrated a high prevalence of central obesity in patients with AxSpA. Secondly it also demonstrated the detrimental effects of central obesity on patient outcomes. The reason these results are important is that central obesity is a modifiable risk factor which once identified can be targeted with MDT intervention and support to improve patient outcomes.

**Slide 8:**

One of the most surprising findings from our analysis was the significantly higher prevalence of central obesity in women with AxSpA compared to men. This has huge implications in terms of trying to improve control of disease activity and even treatment response in women with AxSpA.

The WHR offers an opportunity to improve identification and detection of obesity in all patients with AxSpA. This is important to consider especially in women because BMI was developed for use in males and has previously been shown to perform quite poorly in certain female populations. By comparison the WHR is a simple yet effective tool to screen for obesity in AxSpA. Use of this tool creates a window of opportunity for intervention in patients who develop central obesity.

**Slide 9:**

In conclusion, central obesity is highly prevalent in AxSpA and especially so in women. It is significantly associated with worse patient outcomes and we should be considering use of the WHR when performing screening for obesity in AxSpA. Last but most importantly, it is important to remember central obesity is a potentially modifiable state and prompt identification can create a window of opportunity for intervention with a multidisciplinary approach. Thank you.