Ankylosing spondylitis (AS) is a chronic rheumatic disease. A debilitating condition, it has large patient and societal burdens. However, the financial impact of the disease is not fully understood. Aiming to change this are Dr Jessica Walsh from the University of Utah School of Medicine, Drs Xue Song and Gilwan Kim from IBM Watson Health, and Dr Yujin Park from Novartis Pharmaceuticals Corporation. Through retrospective analysis of recent administrative claims data, the team comprehensively reviewed all-cause and AS-specific costs of disease for US patients. Their findings provide insight into the direct medical costs associated with AS patients. The team noted that the majority of research into AS-related costs has been undertaken outside the United States. Recognising a gap in the literature, the team investigated all-cause and AS-specific direct costs in US patients with AS to better understand the financial impact of the disease. Their study is the first comprehensive analysis evaluating healthcare utilisation and direct costs in US patients with AS compared with matched controls.

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### Counting the Costs of AS

The team undertook retrospective analysis of recent administrative healthcare claims data from US patients. The team used the IBM Watson Health MarketScan Commercial Claims and Encounters (Commercial) database and Medicare Supplemental (Medicare) database. Both large databases provided longitudinal information on healthcare services (including inpatient and outpatient services, long-term care, and prescription drug claims) for patients insured under various health plans. Their study was recently published in *Rheumatology and Therapy*.

**Common Comorbidities**

Along with inflammation of the spine, joints, and entheses, patients with AS often present with peripheral arthritis, psoriasis, and inflammatory bowel disease. Studies also show that patients with AS have significantly more comorbidities than matched controls in the general population, including cardiovascular disease, diabetes, malignancies, and depression [1-3]. In addition to the considerable burden faced by AS patients due to chronic pain and disability, financial burdens associated with AS are also substantial. Despite this, there are limited data about the direct costs of AS.

A team of researchers is determined to gain a better understanding of the financial burden of AS. Rheumatology specialist Jessica Walsh, MD, University of Utah School of Medicine; Xue Song, PhD, an Outcomes Research Practice Leader at IBM Watson Health; Gilwan Kim, PharmD, MS, Analyst Manager at IBM Watson Health; and Yujin Park, PharmD, Associate Director in Health Economics and Outcomes Research and Medical Access at Novartis Pharmaceuticals Corporation, provides insight into the direct medical costs associated with AS. The team noted that the majority of research into AS-related costs has been undertaken outside the United States. Recognising a gap in the literature, the team investigated all-cause and AS-specific direct costs in US patients with AS to better understand the financial impact of the disease. Their study is the first comprehensive analysis evaluating healthcare utilisation and direct costs in US patients with AS compared with matched controls.

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**Physical therapy can help alleviate symptoms of AS.**

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Notably, patients with AS had a tenfold-higher median total-cause healthcare cost than matched controls ($24,978 vs $2,139 per patient per year). Higher costs associated with AS were largely a result of increased medical outpatient services (mean cost $13,220 vs $4,602 per patient per year) and outpatient pharmacy costs (mean cost $14,074 vs $1,737, per patient per year), as illustrated in the figure opposite. Outpatient pharmacy costs associated with AS included use of biologic therapies, other AS-related medications (e.g., anti-inflammatory drugs, antirheumatic drugs), antihypertensives, and antidepressants.

The research team suggests that the presence of common comorbidities contributes to the increased utilizations and costs observed in patients with AS compared to matched controls. Their analysis showed that patients with AS had significantly higher rates of cardiovascular disease, depression, malignancies, osteoporosis, sleep apnea, and spinal fracture, as well as inflammatory bowel disease and psoriasis than matched controls. These comorbidities require additional medications, treatments and complicates AS management, leading to increased costs. However, as the authors note: “Further research is needed to fully determine the potential cause and effect relationships between AS and comorbidities and the role of inflammation in the development of comorbidities in patients with AS.” The team also noted that effects of severity of disease and other risk factors (e.g., obesity and smoking) on healthcare utilisation and costs could not be determined in the current study, since this information is not available from administrative claims data.

**CONCLUSION**

The research of this team of colleagues fills a gap in the body of knowledge on AS comorbidities and costs of care for AS patients in the USA. The current study highlights the high economic burden of the healthcare needs of patients with AS. Findings from their descriptive analysis using large administrative claims databases provide key insights into the direct medical costs associated with healthcare utilisation in patients with AS across the United States. The total financial burden of AS could not be determined in the current study because indirect costs related to AS – such as disability, loss of work productivity, and caregiver costs – were not measured. Further research aimed at quantifying the total financial burden of AS from the individual patient standpoint and society perspective would be beneficial.

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Symptoms, such as inflammation and chronic pain, increase over time for many patients.

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**References**


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**Personal Response**

Your research provides insight into the cost of the healthcare needs of patients with AS. What’s next for your work?

This study looked at direct costs associated with AS, but studies that evaluate societal and indirect costs, such as work productivity, disability, and caregiver costs, will provide a more complete picture of the economic burden. This is especially important for patients in the US healthcare system because previous studies have shown indirect costs associated with AS to be higher than direct costs. In addition, as the diagnostic delay of AS is one of the biggest challenges in optimising care, further research quantifying the cost of delayed AS diagnosis from payer and patient perspectives would help to raise the importance of this issue.