**BACKGROUND:**

- The availability of anti-tumor necrosis factor inhibitors has altered the treatment approaches of ankylosing spondylitis (AS) over the past 15 years [1].
- AS is associated with significant costs for health care systems, which vary by country, and have generally increased dramatically since the introduction of anti-TNF therapy [2].
- This study provides information on the current supply with biological agents and its related costs (other medication, outpatient care, hospital admission) in Germany.

**METHODS:**

- The design is a retrospective claims data analysis.
- The data source is the database of the Institute for Applied Health Research (InGef) Berlin, formerly HRI Health Risk Institute, which includes approximately 6.7 million insured anonymizes who originate from 63 statutory health insurances in Germany. The observation period was from 2012 to 2016 and analyses were performed by the InGef institute. A sample with approximately 4 million insured persons was drawn and stratified by age and gender according to the official demographic structure of the German statutory health insured population (Destatis, Dec 31st, 2013).
- The target population consists of patients who met following criteria with regard to the observation period from 2012 to 2016:
  - Main diagnosis of AS (using relevant ICD-10 codes according to Table 1), and/or
  - Treatment with approved biological agent for AS at least for three months
- If the diagnosis occurred before 2012 patients were only selected if they were already on treatment at the beginning of the observation period in 2012.
- The relevant patient sample was then split into three groups with regard to the observation period from 2012 to 2016:
  - Patients who start a biological treatment ("New")
  - Patients who get continuous treatment with the same biological ("Repeater")
  - Patients who switch biological ("Switcher")
- In sum, 1743 patients could be included in the sample.
- The study evaluated direct medical costs (drugs, outpatient care and hospital admission), hospital admission and change in medication.
- Treatment costs included costs for biological agents which were approved for the treatment of AS as of April 2017, see also Table 1. Furthermore, the following medication groups were considered to be AS related (see also Table 3): Colchicosides acting locally (ATC-Code A07EA), Aminosalicylic acid and selective immunosuppressants (ATC-Code L04AA), non-steroidal anti-inflammatory drugs (ATC-Codes M01AB01 - M01AB17, M01AB61 - M01AB63, M01AB17, M01AE51 - M01AE53, M01AE61 - M01AE63, M01AD01 - M01AD03).

**RESULTS:**

- Most patients with AS are aged above 18, thereby the proportion below 17 years’ account for less than 1%. The average age of all age cohorts is 44.7 years with no difference by gender (44.7 yr men vs 44.8 yr women).
- The proportion of men is higher than of women (63.6% male vs 36.4% female)
- The total costs in 2015 were € 22.5 million and on average € 16’793 per patient.
- Costs of biological agents / other related costs are based on DRGs which are relevant for AS.
- The total number of patients grow yearly on average by 10.5% from 2012-2015. As expected, the key cost driver were biological agents which account for 90.0% of total cost in (2015).
- The proportion of men is higher than of women (63.6% male vs 36.4% female) in (2015)
- The costs could be slightly overestimated due to potential intersections of patients who begin, repeat or switch the therapy.
- Both agents are administered mostly to patients who are already on treatment in 2015 (adalimumab 42.1 % vs. etanercept 30.8 %).

**REFERENCES:**