Background & Objectives
After the approval of the first biologic (b) DMARDs for the treatment of rheumatoid arthritis (RA) in 2001, these substances were preferentially used in patients with severe disease. Today, increasingly patients with moderate disease or comorbidities are treated with biologics, leading to changes in patient case mix.

We aimed to examine which clinical parameters influence the decision of rheumatologists to start the 1st bDMARD in patients with RA and how these factors changed over the past 15 years.

Patients & Methods
We used data of the German biologics register RABBIT. Until April 2015, 13,568 RA patients were enrolled. For this analysis we considered 9,513 patients being biologic-naive at enrolment. They were stratified according to their year of enrolment. They were stratified according to their year of enrolment. We applied a machine learning method of model-based boosting to select clinical parameters which have a relevant impact on treatment decisions in each of the three episodes.

Conclusions
The new treatment guidelines recommend earlier use of bDMARDs already in patients with moderate disease. This change in treatment strategy is reflected in our database.

Growing knowledge and experience with bDMARDs increasingly allows rheumatologists to treat also patients with serious comorbidities like heart failure.

Results
The likelihood to receive a 1st bDMARD increased with prior csDMARD failures, higher DAS28 and glucocorticoid dosage independent of enrolment year (Table 2, data of 2004-06 not shown). In contrast, higher age and better physical function diminished the chance.

Boosting model for starting the 1st bDMARD in 2009-2015
The figure shows the sequence of variables included in the model. The earlier a variable is included (reading from left, see rank list), the more it is relevant to model improvement.

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We refer to the original reference for further details.