Background
For patients with early RA (≤6 months), methotrexate (MTX) is recommended as first-line treatment and in non-responders both the addition of conventional non-biological disease modifying anti-rheumatic drug therapy (triple DMARD therapy) and of biological (anti-TNF) therapy are supported by data. Identification of patients with higher likelihood of responding to one or the other of these options would lead to more personalized medicine and an increased effectiveness of therapy.

Methods
1) Non-responders at month 3 (DAS28>3.2) N=129
- 3 categories for change in MBDA score (BL to 3m):
  1) Non responders (DAS28>3.2)
  2) Responders (DAS28<2.6)
  3) Better responders (DAS28<1.2)
2) Triplet therapy was compared to biological therapy
3) Delta- change in MBDA sub-groups (BL to 3m):
   1) MBDA score decrease ∆CRP≥18
   2) MBDA score increase (∆MBDA<20)
   3) MBDA score change (BL to 3m)

Distribution of delta-MBDA scores against DAS28 at year 1

Figure 1. The distribution of delta-MBDA scores against DAS28 at year 1 for triple therapy (A) and anti-TNF (B) arms. Blue symbols – patients achieving low DAS28 (≤3.2) and red symbols – moderate or high DAS28 (>3.2). Circles – patients with big change in MBDA score from BL to 3m (≥20); triangles, those with moderate decrease (7-20); and vertical lines, those with small decrease (<7).

Proportion of DAS28 response according to delta-MBDA categories

Figure 2. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to decrease of the MBDA score from baseline to 3 months.

Proportion of EULAR response according to delta-MBDA categories

Figure 3. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to decrease of the MBDA score from baseline to 3 months.

Proportion of DAS28 response according to delta-CRP categories

Figure 4. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to decrease of the CRP from baseline to 3 months.

Proportion of EULAR response according to delta-CRP categories

Figure 5. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to decrease of the CRP from baseline to 3 months.

Results

Figure 6. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to decrease of the CRP from baseline to 3 months.

Figure 7. The proportion of responders (DAS28<2.6) at 1 year among arms A and B according to increase/no or small decrease (<18mg/L, upper diagram) and big decrease (≥18mg/L, lower diagram) of CRP from baseline to 3 months.

Conclusion
- Patients with the greatest decreases in MBDA score were more likely to respond to triple therapy (achieving low DAS28 or good EULAR response) whereas patients with lesser decreases of the MBDA score were more likely to respond to anti-TNF therapy.
- CRP score from BL to 3 months compared with ACRP and AΔDAS28 showed better prediction of response at year 1 (either according to DAS28 or EULAR criteria) to conventional triple or anti-TNF therapies.
- Among patients with eRA who do not achieve low disease activity on 3 months MTX monotherapy, the change of the MBDA at 3 months may help guide subsequent therapy.

IN EARLY RA PATIENTS WITH NON-RESPONSE TO METHOTREXATE MONOTHERAPY THE CHANGE IN MULTI-BIOMARKER DISEASE ACTIVITY SCORE IS DIFFERENTIALLY ASSOCIATED WITH SUBSEQUENT RESPONSE TO NON-BIOLICAL VS BIOLOGICAL THERAPY

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