Differentiating Care In Early Arthritis By Prognosis And Risk Stratification: A Therapeutic Algorithm To Improve Outcome and Reduce Costs

THU0120

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Background

New therapies have improved the outcome of rheumatoid arthritis and related conditions dramatically. On the other hand limited resources require a well directed assignment of biological agents and other cost-intensive treatments. For a managed care programme in our early arthritis clinic we developed a therapeutic algorithm that differentiates defined treatment strategies using a prognostic score. By periodical re-grading and re-staging the therapy is adjusted with the treatment objectives clinical remission, unimpaired functional capacity and inhibition of radiographic progression.

Methods

In the early arthritis cohort (disease duration < 2 years; mean disease duration at entry 17,5 months, median 12,0 months, age 57,2 years, median 59,2 years, 86% female) an initial appraisal of prognosis resulted from a modified Visser-score (erosion score, Visser et al. 2002, plus shared epitopes and MR-findings as additional prognostic markers). Final classification was performed after consideration of clinical data (DAS-28, HAQ). For a following treatment period of 3 months patients were assigned to one of four risk groups (low (< 25%) risk, moderate (25-50%) risk, high (50-75%) risk and very high (75-100%) risk for developing erosions). Treatment modalities (e.g. DMARDs, steroids), intensity of care (inpatient, outpatient; frequency and duration of physiotherapy, occupational therapy etc) and frequency of control visits were ascertained according to the particular risk group. If the therapeutic objectives (DAS28 < 3.2, HAQ < 1.0, halt of radiographic progression) were achieved at periodical assessments every 3 months (x-rays every 12 months) and re-evaluation of prognosis resulted in the same risk group, current therapy was continued unchanged within the treatment corridor of that group. In all other cases therapy was modified and adjusted to the new risk group.

Results

150 patients with early arthritis were recruited from July 2005 to December 2007. For the present, follow-up data over 12 months were available in 85 patients and over 24 months in 32 patients. Over these periods the intended objectives could be achieved. The majority of patients were in clinical remission after 12 months (DAS28 < 3.2: 55/85 (65%), DAS28 < 2.6: 39/85 (46%)) and after 24 months (DAS28 < 3.2: 25/32 (76%), DAS28 < 2.6: 19/32 (59%)) despite different treatment modalities with different assignment of resources (DMARDs at 12 months: no DMARDs 23/85 (27%), conventional mono 39/85 (46%), conventional combi 9/85 (11%), biological 11/85 (13%) (1 mono, 10 combi). Radiographic progression was observed in 2/58 patients at 12 months (3,5%) and 2/24 patients at 24 months (8%). Conversely, at 24 months healing phenomena with regression of erosions were seen in 3 patients with erosions at entry.

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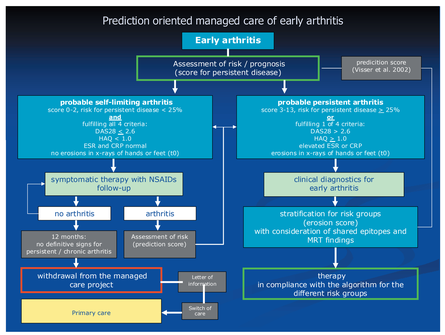
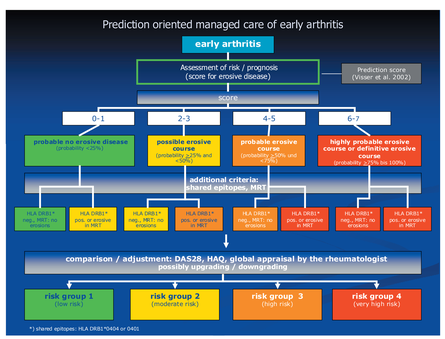
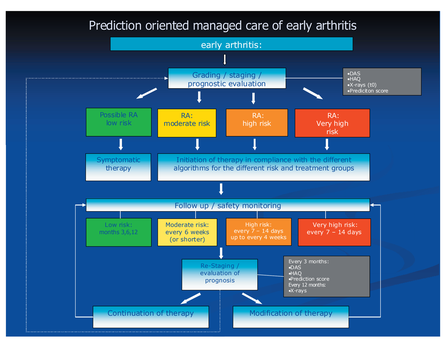
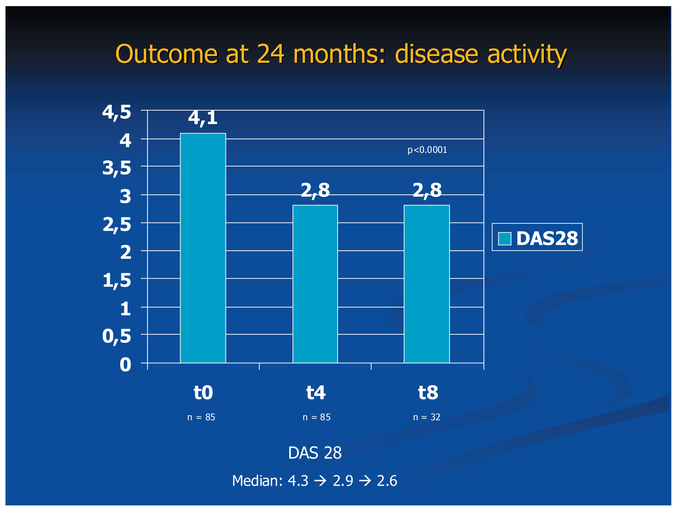
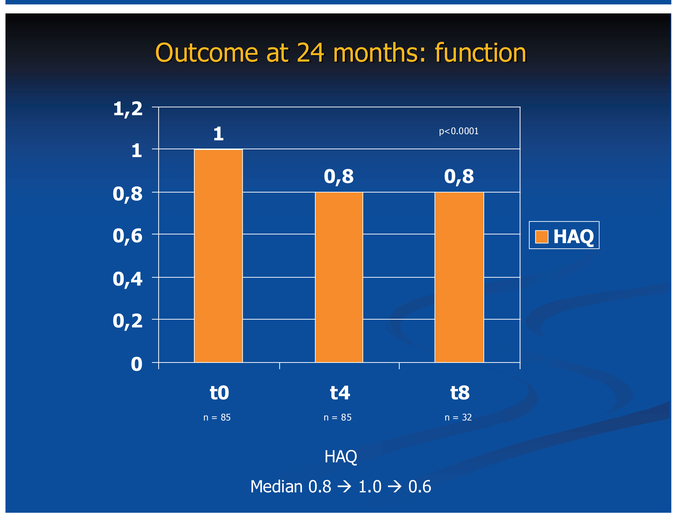
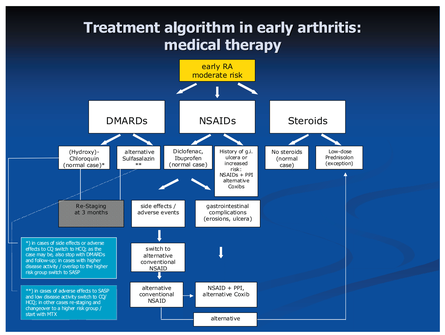


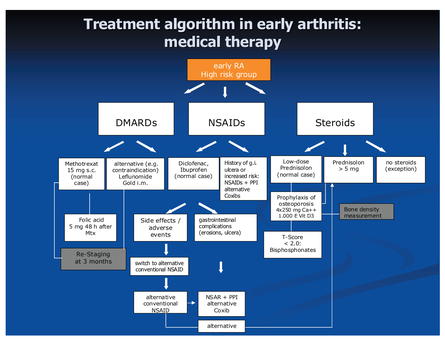


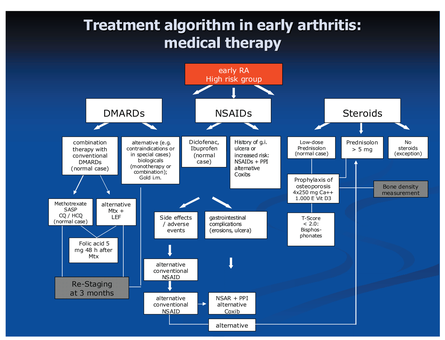










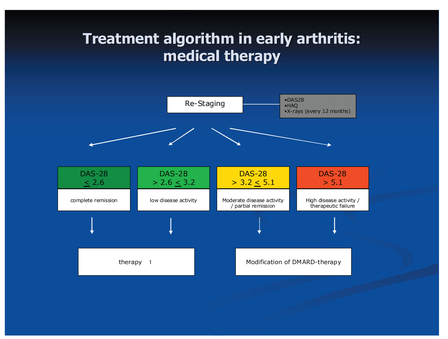


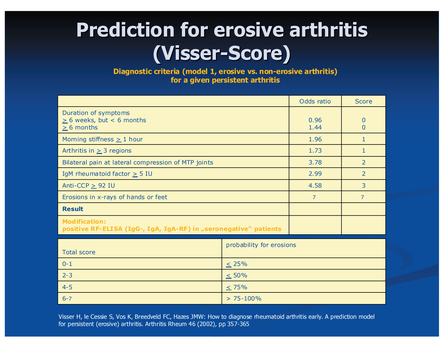
Conclusion

This managed care project combines five principles to achieve better outcomes for early arthritis patients:

- Stratification of therapy depending on prediction criteria (modified Visser-Score)
- Aiming for clinical remission (Fin-RACo)
- DAS-related modification of antirheumatic therapy (BeST)
- Tight control (TICORA)
- Tailoring of therapy to the individual patient using a predefined algorithm (CAMERA)

The results suggest that this approach may result in good clinical outcomes and save resources by well directed assignment of therapy.





Prediction for erosive arthritis (Visser-Score)

Diagnostic criteria (model 1, erosive vs. non-erosive arthritis) for a given persistent arthritis

	Odds ratio	Score
Duration of symptoms: ≥ 6 weeks, but < 6 months	0.96	0
≥ 6 months	1.44	0
Morning stiffness ≥ 1 hour	1.96	1
Arthritis in ≥ 3 regions	1.73	1
Bilateral pain at lateral compression of MTP joints	3.78	2
IgM rheumatoid factor ≥ 5 IU	2.99	2
Anti-CCP ≥ 92 IU	4.58	3
Erosions in x-rays of hands or feet	?	?
Result		
Modification: positive RF-ELISA (IgG-, IgA, IgA-RF) in „seronegative" patients		

Total score	probability for erosions
0-1	≤ 25%
2-3	≥ 50%
4-5	≤ 75%
6-7	> 75-100%

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Acknowledgements: the model was developed in cooperation with two organisations of the German compulsory health insurance (DAK, Deutsche Angestellten Krankenkasse, HMK, Hamburg-Münchner Krankenkasse)