

## Rationale for the Use of Digital Microfocal Radiography Direct Image Magnification of 5,5 Times for the Survey Brushes Patients with Rheumatoid Arthritis

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### Abstract

The method of microfocal radiography of hands in patients with rheumatoid arthritis using the optimum shooting settings. A comparative analysis of the possibilities of classical radiography and developed a method to identify destructive changes in the hands of patients with early rheumatoid arthritis. The study included 30 patients with early rheumatoid arthritis (lasting less than 12 months). Among the patients there were 19 (63,3 %) women and 11 (36,7 %) men. All patients underwent magnetic resonance imaging (MRI), classical radiography (CR) and microfocal radiography direct image magnification of 5,5 times (MFRG  $\times 5,5$ ) brushes. Based on MRI results were the most informative areas to find erosions in the hands with early rheumatoid arthritis (joints of the wrist, the wrist joint, metacarpophalangeal and interphalangeal joints II–IV of fingers). The analysis proved the effectiveness of the use of imaging in MFRG  $\times 5,5$  destructive changes in selected «areas of interest». So, microfocal radiography, in comparison with conventional radiography, has identified significantly more erosions (from 56,6 and 20 % of patients, respectively). Furthermore, when using the new shooting techniques increased incidence of such symptoms as cystoid bone radiolucencies (from 46,6 to 53,3 %). Also, the use MFRG  $\times 5,5$  make it possible to better differentiation of soft tissue changes in the affected joints.

**Key words:** Rheumatoid Arthritis, Magnetic Resonance Imaging, Microfocal Radiography, Radiography.

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