Faecal Calprotectin home test in Ulcerative Colitis - is it possible?

Margarita Elkjaer¹, Johan Burisch¹, Arne Røseth², Vibeke Voxen Hansen¹, Birgit Deibjerg Kristensen¹, Dag Bremnes³, Jens-Kristian Slott Jensen⁴, Pia Munkholm¹

¹Herlev University Hospital, Copenhagen, Denmark
²Aker University hospital, Oslo Norway
³Skannex AS, Oslo, Norway
⁴Slott Stist, Bagsværd

1. 175 faecal samples have been collected from ulcerative colitis (UC) patients involved in a randomised control trial “Constant-care”
2. ELISA vs. RTSCAN mean difference of 5.1 mg/kg (95% CI: ±16.5-26.6) fig 1
3. ELISA vs. HTPHOTO mean difference of 26.7 mg/kg (95% CI: 1.3-52.2) fig 2
4. RTSCAN vs. HTPHOTO mean difference of 21.7 mg/kg (95% CI: 11.5-32.0) fig 3
5. The coefficient of variation (CV %) of ELISA was in median 2.8% (range, 0-21.6%) vs. HTPHOTO 6.2% (range, 0-41.6%), p-value <0.01

Conclusion
A positive correlation between ELISA vs. Home Test was revealed with the CV being less than 10%.
In future aspects the Home Test can be implemented in UC patients as part of disease self-management.

Background
• Enzyme-linked immunosorbent assay (ELISA) is a quantitative method & the “Gold standard” for faecal Calprotectin (FC) analysis
• A new quantitative method, the “Rapid Test” (RT), has been developed to be carried out by the lab technician, in order to have the results the same day as the faeces sample is received.
• RT has further been developed into a “Home Test” (HT) to be carried out by the patients themselves

Aim
• To compare the ELISA with the RT’s for FC measurement
  - read by a PC-scanner system
  - using an ordinary cell phone system with special software built in (DB)

Methods
• After dilution one drop of faecal extract was applied onto the RT- device
• The colour intensity of the test line was read after 10 min incubation time
  - using a lap-top linked with an ordinary table top scanner (photo 1 and 2)
  - using a cell phone by taking & sending a picture to a server in Oslo by using Mobile Internet (photo 3)

In this study the RT including HT was carried out by our lab technicians.