



Training in Optical Diagnosis of early Colorectal Cancer *TOD early CRC*

Work plan



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Presentation

This specialised training aims to **improve the early detection of colorectal cancer in lesions found during a colonoscopy**. Scientific evidence of optical diagnosis with zoom or magnification in Japanese reference centres has shown high accuracy in predicting histology and, therefore, selecting the indication for advanced endoscopic treatments (such as submucosal endoscopic dissection or piecemeal endoscopic mucosal resection) and surgery.

The theoretical and practical content of this course is aligned with the recommendations of international guidelines (ESGE, ASGE and JGES). This might help homogenise and centralise advanced procedures to offer the patients the most suitable treatment.

The programme is addressed to medical doctors already trained in colonoscopy. This asynchronous course is planned to be completed in 26 hours within the landmarks highlighted in the calendar.

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Objectives

General objectives

This training programme aims to improve optical diagnosis of early colorectal cancer and estimate the histology of colorectal lesions so that, based on the colonoscopy report, the endoscopist and a multidisciplinary committee may make a treatment decision considering other patient-related and local factors.

Modules objectives

Module 1. Decision-making in the treatment of colorectal polyps. Is there room for improvement?

Raise awareness that optical diagnostics may help to overcome the limitations of current clinical practice:

- Unnecessary surgery in patients without risk of lymph node metastasis.



- Unnecessary endoscopic treatments in unsuspected (and non-tattooed) lesions with deep submucosal invasion or risk of lymph node metastasis.
- Inadequate endoscopic treatment choice such as piecemeal EMR and poorly-orientated specimens do not allow submucosal invasion and resection margins to be measured.
- Unnecessary ESD in low-grade dysplasia.
- Scheduling colonoscopies to attempt removal of deeply invasive cancer.
- Making decisions based on biopsies, which can have sampling error.
- Inadequate diagnosis and referral to a tertiary centre.
- Treatment decisions that vary by centre.

Module 2. Understanding the pathologist's perspective

- To know how to identify the layers of the colon in histological slides.
- To know the risk factors for lymph node metastasis on which the indication for salvage surgery in endoscopically resected colorectal T1 is based.
- To understand the limitations that prevent the correct evaluation of colorectal T1s (piecemeal resection and poor orientation of the specimen).
- To know a checklist of endoscopic quality measures that should be performed when endoscopic suspicion of sm invasion is raised to facilitate pathological assessment.

Module 3. Image-enhanced endoscopy

- To present the available image-enhanced endoscopy systems used to evaluate early cancer in colorectal lesions:
 - Virtual chromoendoscopy: NBI and BLI.
 - Dye based chromoendoscopy: indigo carmine and crystal violet.
 - Magnifying endoscopy.
- To know the anatomy of the glandular crypt, recognise pits and vessels with each modality.
- Learn to systematically assess a lesion in clinical practice with each modality.

Module 4. Assessment with white-light imaging

- To know the risk of sm invasion according to location and size.
- To recognise each morphology type according to the main classifications for superficial lesions, and their risk of sm invasion:
 - Paris classification.
 - Lateral Spreading Tumour (LST) classification.
- To recognise the main gross morphological malignant features and their risk of sm invasion.

Module 5. Dye-based chromoendoscopy with indigo carmine

- Know what the endoscopist should look for when assessing a lesion with indigo carmine.
 - Delimit the lesion by identifying its margins.
 - Confirm morphology (Paris or LST classification).



- Learn the key points to differentiate polypoid and non-polypoid growths and interpret their clinical significance.
- Learn how to confirm or rule out the presence of a demarcated area and its clinical significance.

Module 6. Virtual chromoendoscopy without magnifying endoscopy

- Learn to assess lesions with virtual chromoendoscopy without magnifying endoscopy using the NICE classification. More specifically, learn how to assess:
 - Colour.
 - Vascular pattern.
 - Surface pattern.
- Know the most likely histology for each subtype of the NICE classification.
- Combine the NICE classification with some specific features assessed with white-light imaging for predicting the probability of deep sm invasion.
- Know the recommended diagnostic or therapeutic approach for each condition.

Module 7. Virtual chromoendoscopy with magnifying endoscopy

- To know the classifications that have been validated for predicting early colorectal cancer with virtual chromoendoscopy and magnifying endoscopy.
- To learn how to assess lesions according to the Japanese NBI Expert Team (JNET) classification.
- To ascertain the recommended approach for each type of lesion according to the JNET classification:
 - Piecemeal EMR.
 - En bloc resection.
 - Surgery.
 - Further investigation evaluating the Kudo pit pattern with crystal violet and magnifying endoscopy.

Module 8. Dye-based chromoendoscopy with crystal violet and magnifying endoscopy

- Learn how to assess the Kudo pit pattern with crystal violet and magnifying endoscopy.
- Learn the definition of the invasive pattern:
 - V irregular (Vi) severe in a demarcated area.
 - V non-structural (Vn).

Module 9. Special cases and limitations

- Raise awareness of limitations of optical diagnosis and special cases that will be discussed in the exercises.

Module 10. Summary of invasive pattern

- Learn to systematically characterise lesions and predict histology based on the optical diagnosis.



- To know how to describe this characterisation clearly and concisely in the colonoscopy report.
- Understand how to make treatment decisions based on the optical diagnosis (e.g. piecemeal EMR, ESD or biopsies and surgery), either alone or as part of a multidisciplinary team.

Content

The following information is given in the headings of the platform:

- **Announcements.** This will be the way the Faculty will announce any new information.
- **Participants forum.** This forum is a space for participants to share comments or any questions that may arise with other participants and the tutor. To allow discussion among participants, the tutor will not participate in this forum and will give an opinion in *Sharing knowledge I and II*.
- **Direct access to Work plan and Calendar.**
- **Groups and tutors.** Participants will be listed into groups of up to 10 to attend the *Sharing knowledge I and II* sessions led by a tutor. Groups will initially be formed according to participants' preferences, then by voting order.
- **Sharing knowledge – Acces link.**
- **Key steps in the optical diagnosis of early colorectal cancer.** It is a useful Figure shown in Module 3. This figure will also be available on the platform heading after completing Module 3.
- **Reminder on Responsibility acceptance agreement.**

The course scheme is represented in the following figure and described below.

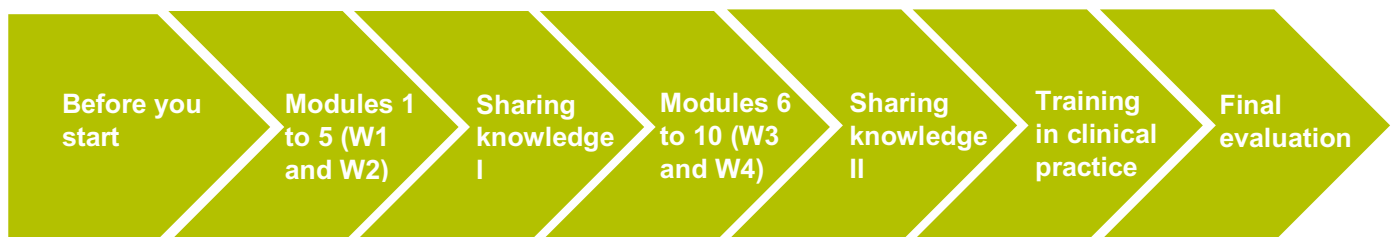


Fig. 1 TOD early CRC. Course scheme



Before you start

This section contains:

- **Responsibility acceptance agreement.** A declaration so any decisions the participants might take during or after taking this course are their own responsibility. This is a requirement for the course to be displayed.
- **Work plan.**
- **Calendar.** This document displays a calendar with deadlines for this course.
- **Course introduction.** Welcome video of the course Director highlighting the main points of this training programme.
- **Participant characteristics.** Participants in the LODIP study are not required to fill this space, as this information has already been registered in REDCap.
- **Initial test.** Test on 20 lesions assessed with magnifying endoscopy. Once the test is submitted, answers cannot be changed. As the participants repeat the same test at the end of the course, correct answers are shown after submitting the final test.

Modules

The topics of the modules are:

1. **Decision-making in the treatment of colorectal polyps. Is there room for improvement?**
2. **Understanding the pathologist's perspective**
3. **Image-enhanced endoscopy**
4. **Assessment with white-light imaging**
5. **Dye-based chromoendoscopy with indigo carmine**
6. **Virtual chromoendoscopy without magnifying endoscopy**
7. **Virtual chromoendoscopy with magnifying endoscopy**
8. **Dye-based chromoendoscopy with crystal violet and magnifying endoscopy**
9. **Special cases and limitations**
10. **Summary of invasive pattern**

Each module contains the following sections:

Introduction

- Objectives. The aims of the module are concisely listed.
- Before you start. In this short video, a tutor introduces the topic and explains the main theoretical points.

Learning by doing

- Exercises. Each exercise usually refers to a single lesion and may have more than one question. Answers are not registered for grading participants. Questions aim to make the participant think about the issue and motivate them to pay more attention to the feedback. This is the key point in this course.



To know more

- Further readings. Contains the main references on this topic.
- Some modules may have additional resources.

Summary

The same knowledge provided with the feedback in all exercises is written in a structured manner with appropriate references. The summary aims to consolidate the knowledge initially acquired in the *Learning by doing* section.

Your opinion matters

A short questionnaire to provide course organisation with your feedback.

Sharing knowledge I and II

Sharing knowledge is a 90 minutes meeting led by a tutor with up to 10 participants. Questions and points raised in the forum will be discussed by the participants and the tutor. The content of Modules 1 to 5 will be discussed in *Sharing knowledge I* and Modules 6 to 10 will be debated in *Sharing knowledge II*.

Groups, tutors, calendar and the video conference link will be shown in the headings platform during the first days of the course.

The meeting will be recorded and shown in the **Sharing knowledge** resources section. Only participants in the same group have access to view the video.

Training in clinical practice

Participants will upload **pictures or a video of 3 lesions**. For each lesion, the participant will write the lesion description and recommended treatment as if it were a colonoscopy report, so the images and description could be discussed in a committee or another GI consultant can explain the plan to the patient. The participant can recommend more than one option to be discussed.

A tutor will revise this description and provide the participant with personalised feedback based on the tutor's opinion.

We recommend ensuring that your Endoscopy Unit is equipped with catheter spray, mucolytic like Pronase (only available in limited countries like Japan) or N-acetylcysteine 10% and indigo carmine 0.4%. If you have magnifying endoscopy or dual focus, please try to get crystal violet (= gentian violet) 0.05%. Please get in touch with the Pharmacy department to obtain them before you start the modules so they are available in the Training in clinical practice phase. If you do not know the preparation protocol, provide them with the name of a hospital in your country where you know it is available. They will then be able to obtain the preparation protocol.



Final evaluation

The section contains:

- **Final test.** The same 20 lesions assessed in the initial test will be evaluated after completing the course. After submitting the test, questions with a wrong answer will be pointed out. A second attempt will be allowed to increase the final grade.

Certification

The section contains:

- **Course global feedback.**
- **Certificate.** It will be available for those participants who have completed all the activities and obtained 80% accuracy in the final test (after two attempts). This course is endorsed by Asociación Española de Gastroenterología (AEG) and Sociedad Española de Endoscopia Digestiva (SEED).

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