

INSTRUCTIONS FOR CONSULTANTS

To participate in the study you need to be a surgical pathology consultant (or senior consultant) and sign out at least one lung cancer case per year (it doesn't have to be from the lung, it is e.g. sufficient if you sign out biopsy/cytology from another organ with metastasis of lung cancer).

All cases are bronchial or lung (core) biopsies sampled to confirm or exclude malignancy. There is no special selection (other than reduction of non-diagnostic and completely normal samples) or enrichment of difficult or easy cases, why the cases may essentially be considered "routine cases".

You get the information from the time of diagnostics in the clinical setting (age, sex, previous malignancy; smoking has rarely been noted and is therefore not included). When diagnosing the cases, it's ok to use books/internet, as in the clinical diagnostic situation, but not consulting colleagues.

Non-small cell cancer with no clear morphology is normally stained with one IHC marker for adenocarcinoma and one for squamous cell carcinoma. To make the cases realistic but not guide by choice of IHC markers, TTF-1 and p40 has been included for all cases. Note that TTF-1 clone SPT24 has been used as this is the most common clone in Sweden. Also note that the IHC sections may be rotated 180 degrees compared to H&E sections. In odd cases, the scans of IHC markers are not of optimal quality. If there is any case which is difficult to diagnose because of this, please make a note.

More IHC markers are commonly used for several malignant tumors, but in this study only TTF-1 and p40 are included. However, for each case, you shall state if you would have ordered additional IHC markers to confirm the suspected diagnosis in the clinical diagnostic situation (which IHC markers should not be stated).

E.g. adenocarcinoma (i.e. clear glands or mucin inclusions) and NSCC probably adenocarcinoma (NSCC with unclear morphology but support from IHC staining) here counts as the same diagnosis as these cases are handled in the same way.

In the excel sheet, fill in both the "general questions" and the questions for each case (all questions and possible answers are also found below, some with more details in this document). Send the excel file as an email to hans.brunnstrom@med.lu.se. Everyone will get feedback later, which should not be spread (in case there are more pathologists who have not yet diagnosed the cases). I will send a USB stick to each department with one or more participating pathologist. It's perfectly fine to save the scanned cases on a personal computer (also after the completion of the study; e.g. in Lund we plan to use the cases later for education of residencies).

All participation is anonymous in the regard that all results will be presented on group level. No individual results will be revealed, and if you don't want to your name will not be seen anywhere. However, the plan is to publish the work in a scientific journal, and of course your name will then be seen in the paper (but again, no individual results that can be linked to a specific pathologist). Only I (Hans Brunnström) will have access to individual data.

You will be asked later to participate in similar studies, but with other specific scientific questions/cases. I will get back to you about this.

Just send me an email (hans.brunnstrom@med.lu.se) if you have any questions.

General questions (to be answered in the excel sheet)

How many years have you worked as a consultant?

<5

5-14

15+

How many lung cancer cases do you sign out a normal year?

1-49

50+

Are you comfortable diagnosing scanned cases?

Yes

No

Which TTF-1 clone are you used to?

SPT24

8G7G3/1

Both

Other

I don't know

How long time did it take to diagnose the cases? (Round to closest half-hour)

0,5 h

1 h

1,5 h

2 h

etc.

Questions for each case (to be answered in the excel sheet)

Which is the most likely diagnosis / working hypothesis?

Adenocarcinoma (AC) / non-small cell carcinoma probably AC

Squamous cell carcinoma (SqCC) / non-small cell carcinoma probably SqCC

Small cell lung carcinoma (SCLC) (incl. combined SCLC)

Large cell neuroendocrine carcinoma (LCNEC) / non-small cell carcinoma probably LCNEC (incl. combined LCNEC)

Carcinoid tumor

Non-small cell carcinoma other specified (adenosquamous carcinoma, sarcomatoid carcinoma, salivary gland type carcinoma etc.)

Non-small cell carcinoma not otherwise specified

Non-epithelial primary malignancy (sarcoma, lymphoma, mesothelioma etc.)

Metastasis to the lung (regardless of type or origin)

Suspicion of malignant tumor

Atypia of undetermined significance

Benign tumor, normal or non-neoplastic disease

Would you order more IHC markers to confirm the diagnosis?

Yes – you would order more diagnostic IHC markers (in addition to TTF-1 and p40) to either determine the type of malignancy or prove malignant tumor

No – no additional markers or only predictive markers (PD-L1, ALK, ROS1 etc.), levels or analyses for non-neoplastic diseases (for mycobacteria, fungi etc.)