Good afternoon everyone. I will be talking on this trial which was published in Lancet Respiratory Medicine in 2024. Systematic endoscopic staging of media stand-in to guide radiotherapy planning in patients with locally advanced non-small cell lung cancer. So, let us go to first what do you mean by media cell sampling? What are the different types of media cells sampling? So, there are two types. One is selective and one is systematic. Now, selective involves only selected suspicious notes, sampling of those suspicious notes, very systematic involves exploration and biopsy of the standard set of lymph node stations in each patient. Now, for early stage cancers, the non-small cell lung cancer, the guidelines recommend that we have a systematic media stand-in lymph node staging or a complete media stand-in dissection, so that the further treatment is guided. As opposed to for local advanced tumors, the treatment, the guidelines mentioned that there will be only selective lymph node sampling and most of the international guidelines recommend that the radiation target volumes are as per the pet volume or the pet data which is available.

Now, with this in mind, the author that is Professor Daniel Stanford in 2016 published this pilot study in Australia, where did they try to compare systematic and e-bus guided media style staging versus pet? What is the discrepancy in the nodal positivity and how this can potentially affect our radiotherapy planning sequence? So, in this pilot study, it was 30 patients were taken, they were compared with e-bus as well as pet and they found it in 20 of the patient, the pet and the e-bus, our reports were concordant, but 10 patients, the reports were discordant. Of these 10, 4 had 4 on e-bus detected a greater extent of media's canal disease and 6 detected lesser extent of media's canal disease. Thus, this study tried to show that there is discordance or discrepancy between the e-bus data and the pet data. With this in mind, the authors did a plan for a multi-centric international trial and they published the protocol in 2022 in the BMC pulmonary medicine. And now, we are going to give the results or speak on the results which was published in the 2024.

Now, with this in background, this was the prospective international multi-centric single arms trial which was conducted across 4 countries, that is Australia, Canada, Netherlands and the US with 7 among 7 cancer centers. Patients more than 18 years of age who had locally advanced non-small cell lung cancers, who had systematic endoscopic medias and lymph nodes staging were included in the trial. And those patients who were planned for radiation, whether it was a chemo-redotherapy or a high dose palliative radio therapy were included in the study.

Now, the main aim of the study was to find out the pet occult lymph node

metastasis. Now,
when I say pet occult, so these are the ones wherein on pet they have shown negative,
but on EBA, e-bus trans bronchial needle aspiration has come out to be positive and to find out
what are the discrepancy. So, the primary endpoint was the proportion of patients in
whom the pet occult media trial lymph node metastasis are detected by systematic e-bus.
Now, secondary endpoint was the proportion of patients with endoscopy demonstrated benign
lymph nodes and to find out the risk factors which predispose for this endoscoping detection
of pet occult disease to find the difference between the RT doses to the lymph nodes and
the OIRs in both the plans that is the information with respect to only pet or pet plus e-bus.
So, this from Jan, from 2018 to 2020 to 155 patients underment systematic endoscopic
media trial lymph nodes staging and were eligible for analysis. Now, if you can see that the
baseline characteristics over here, so around 60 percent male, 40 percent female, the most
common histology was edinocarcinoma followed by swamisyl carcinoma. Around 73 percent of
the patients were in two stage while n3 were around 17 and the maximum largest nodal size
were around 12.1 mm. Now, these are the results. So, of the 155 patients which underwent e-bus
with systematic staging, 98 of the patients had pet and e-bus concordance while 57 of
the patients had discordant results. Of the 57, 18 patients had greater extent of the
disease as seen on the e-bus while 39 of the patients had showed lesser extent. That means
18 patients had more had disease positive on e-bus which was negative on pet and of these
13 patients were up stage. Now, of these 13 patients, 9 patients actually have a detected
of n3 nodal disease. Similarly, for patients with 39 patients who were detected with lesser
extent of the disease, 31 were down stage and of these 31, 20 patients underwent surgical
resection. Now, of these 20 patients who underwent surgical resection, 16 patients had p-n0 disease.
So, this just tells us that there is a discrepancy in the e-bus and the pet and that pet should
not be the only modality in targeting our nodal volumes. Now, if you see what was the
alteration in the treatment of these 18 patients who had a higher extent of the disease. So,
what the authors did there was when they plan for the treatment of these 18 patients who
showed greater extent of the tumor on the e-bus, all of them underwent chemotherapy
that is of the 18 sorry 14 underwent radiation and these radiation plan included the volumes
which were positive even on e-bus. Three of these patients underwent systemic therapy
only because the authors thought that there was a very large radiation volume and

which
would cause lot of toxicity. So, went with only systemic therapy. Now, if you see the
39 patients in whom the lesser extent of disease was identified, 20 patients like we just mentioned
by just spoke that underwent surgical resection, the rest 19 patients, 16 of those underwent
radiation. Now, in the patients in whom lesser extent of the tumor's lesser extent of the
nodal involvement was seen that means on pet it was positive and on the e-bus it was negative.
So, in this patient they included only the pet positive data because there was no modality
or there was no further exploration to detect whether this e-bus negative was really true
negative. So, what was the impact on radiotherapy planning? All the patients received 1630. Now,
for pet occult node the minimum dose received was ranging from 1 to 58 and the median dose
was only 12. That means that the pet occult node received less than half of the prescription doses.
So, in this what they have done is they created two sets of plans. One, depending upon your pet
data that is traditionally how we plan and second incorporating into our e-bus data. So, in patients
who had pet plus e-bus positive, the e-bus positive was also in co-operated and the treatment fields
were extended. In patients who had e-bus negative those nodes were actually minus from your PTV
volume. So, they created a hypothetical volume for patients who had e-bus negative. So, they saw
that the median volume in patients of pet occult patients last slide. So, was only 10 percent
and there was definitely reduction in the OIRs for e-bus negative but though it was not significant.
Now, when they just check the endoscopic detection of pet occult diseases, only
risk factor was adenocarcidoma. So, they suggested that the medicinal staging with systematic
e-bus is definitely required, it is more accurate and it can change tumor volumes. Now,
the limitations are that all patients did not undergo surgical confirmation because it was EUS,
it was across seven centers. So, it was not the same product, the expertise differed across the
seven centers. Number of lymph nodes sampled were various and pet can assess all lymph nodes
station with e-bus or endoscopic staging can only assess limited staging. Thank you.