

SSA04-02

Lung Nodule Consistency and Relative Risk of Future Lung Cancer Diagnosis: Does Sex Matter?

Sunday 10:55-11:05 AM | SSA04-02 | NA

#### PURPOSE

To compare differences in the relative risk (RR) of lung cancer (LC) by nodule consistency and sex in the CT arm of the NLST.

#### METHOD AND MATERIALS

By study design, all CT-detected nodules measuring 4-30 mm were characterized by consistency (solid=SN, nonsolid/ground glass=GGN, and part-solid=PSN). For each nodule consistency, the following were calculated: sensitivity, specificity, positive predictive value (PPV) and negative predictive value (NPV) for LC for both men (M) and women (W). For each nodule consistency, RR was calculated as the ratio of the probability of LC given a reported nodule consistency to the probability of LC given no nodule of the same consistency.

#### RESULTS

Of 26,455 participants in the CT arm of the NLST, 9994 (37.8%) had a positive screen at  $\geq 1$  time point. 8062 (81%) had 1 nodule consistency and 1932 (19%) had  $\geq 1$  nodule consistency. The RR of LC was significantly higher for women than men for GGNs (2.68 W vs. 1.68 M,  $p=0.0026$ ), and a similar trend was observed for PSNs (4.45 W vs. 3.19 M,  $p=0.0556$ ). In contrast, SNs were associated with a comparable RR for both sexes (4.48 vs. 3.77,  $p=0.1970$ ), along with nearly equivalent sensitivity and specificity for LC (sensitivity = 69.6% W, 68.5% M; specificity = 69.6% W, 68.5% M). Women demonstrated a higher sensitivity than men for subsolid nodules, including GGNs (26.7% W, 12.6% M) and PSNs (16.2% W, 10.2% M). PSNs had the highest PPV in both sexes (15.3% W, 12.3% M), whereas SNs had the lowest PPV in women (7.9%) and GGNs had the lowest PPV in men (6.6%).

#### CONCLUSION

Rates of lung cancer are influenced by both nodule consistency and sex. Subsolid nodules are associated with a higher risk of lung cancer for women than men.

#### CLINICAL RELEVANCE/APPLICATION

Radiologists should be aware of sex-related differences in risk of lung cancer for subsolid nodules when interpreting CT screening studies.