Abstract

It is difficult to detect precancerous lesions such as dysplasia and carcinoma in situ (CIS) by conventional white light bronchoscopy (WLB) because these lesions are only a few mucous layers thick and a few millimeters in surface diameter.

Both WLB and NBI were performed in all patients during a single procedure.NBI is used to define pathologic patterns of bronchial submucosal blood vessels. Shibuya et al. described pathologic areas as dotted, tortuous and abrupt-ending blood vessels. NBI uses two narrow bands of light, blue narrow band light (390–445 nm) to image capillaries in the surface layers of mucosa and green narrow band (530–550 nm) to image thick blood vessels in the deeper layers.In this research we research studied the value of adding NBI as an adjuvant procedure to improve specificity and sensitivity of WLB in detection early lung cancer.

The study was carried on 30 patients , Patients were of different age ranging from 46 to 90 years old, Mean 60 years ± 11.5 they were 22 males and 8 females.

Methods and results of the work include all subjects underwent clinical examination and CXR, WLB, NBI bronchoscopy. All cases underwent bronchoscopic biopsies from the suspicious areas and had sent for histopathological examination. By NBI technique: 18 (60%) invasive cancer, 3 (10%) severe dysplasia / CIS, 3 (10%) mild/moderate dysplasia, 1 (3.3%) squamous metaplsia. By WLB: 11 (36.7%) invasive cancer, 6 (20%) severe dysplasia / CIS, 4 (13.3%) mild/moderate dysplasia, 1 (3.3%) squamous metaplsia.

From this comparative study, it is concluded that: The sensitivity of WLB in detection of early lung cancer was 9.1 % and the specificity was 72.7 % with Positive predictive value (PV^+) was 25 %and Negative predictive value (PV^-) of 44.4 %. The sensitivity of NBI in detection of early lung cancer was 57.1 % and the specificity was 57.9 % the positive predictive value (PV^+) was 33.3 % and negative predictive value (PV^-) was 78.6 %. Combined NBI + WLB decreased the number of biopsies taken from the false positive lesions examined by WLB alone so increased the specificity, the positive predictive value and the diagnostic accuracy.