Molecular Markers in Advanced NSCLC (Part 2): Results of Broad Testing in Advanced NSCLC, by Dr. Alice Shaw, Massachusetts General Hospital
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Molecular Testing in Advanced NSCLC: Who to Test and What to Test For?

The MGH Experience

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Oncogenic Drivers in NSCLC

- KRAS 24%¹
- EGFR 13%¹
- PIK3CA 4%¹
- ALK 3%²
- HER2 2%³
- BRAF 2%¹
- NRAS 1%¹
- RET ~1%⁵
- MET ~1%⁴
- AKT ~1%³
- ROS ~1%²

¹Sequist et al., Ann Oncol 22:2616, 2011
²Takeuchi et al., Nat Med, Feb 12 2012
³Shaw et al., NEJM 365:158, 2011
⁴Kris et al., WCLC 2011
⁵Takeuchi et al., Nat Med, Feb 12 2012
Genetic Profiles by Gender

*EGFR mutations are more common in women*

Genetic Profiles by Smoking History

*EGFR, ALK, and ROS are more common in neversmokers*

Genetic Profiles by Ethnicity

EGFR mutations are much more common in Asian populations

Caucasian never smokers

Asian never smokers

Genetic Profiles by Histologic Subtype

Oncogenic drivers differ between adenocarcinomas and squamous cell carcinomas

Histologic Subtypes of ALK+ and ROS+ NSCLC

- ALK-positive (N=117):
  - Adenocarcinoma: 92%
  - Adenosquamous: 5%
  - Squamous: 2%
  - NSCLC NOS: 1%

- ROS-positive (N=31):
  - 100%
Global Resource for Advancing Cancer Education

LUNGevity
Find it. Treat it. Live.