Chemotherapy Algorithm for Advanced Non-Small Cell Lung Cancer

***Consider entry into clinical trials for all eligible patients***

a) Non squamous NSCLC (EGFR -ve and ALK -ve)

- **Non squamous NSCLC**
  - **ALK +ve**
  - **EGFR sensitising mutation**
  - **EGFR, ALK and PD-L1 testing, and ROS-1 testing if indicated**
  - **ROS-1 +ve**
    - **Crizotinib**
  - **PD-L1 > 50% PS 0-1, and suitable for immunotherapy**
    - **Pembrolizumab**
    - **Progression**
    - **Pemetrexed & Cisplatin/Carboplatin**
    - **Stable disease, PR or CR after 4 cycles**
    - **Pemetrexed maintenance**
    - **Progression**
  - **PD-L1 < 50% or PD-L1 -ve PS 0-1, and suitable for chemo-immunotherapy**
    - **Patient unsuitable for immunotherapy**
    - **age > 70 and fit for chemo, but not doublet chemotherapy**
    - **Vinorelbine monotherapy**
    - **Pemetrexed**
    - **Stable disease, PR or CR after 4 cycles**
    - **Pemetrexed maintenance**
    - **Progression**
  - **Patient unsuitable for immunotherapy**
    - **Pemetrexed & Cisplatin/Carboplatin**
    - **Stable disease, PR or CR after 4 cycles**
    - **Progression**
    - **Atezolizumab, Bevacizumab, Paclitaxel & Carboplatin**
    - **Stable disease, PR or CR after 4 cycles**
    - **Progression**
    - **Atezolizumab + Bevacizumab**
    - **PD-L1 ≥ 1%**
    - **Pembrolizumab**
    - **Pemetrexed & Cisplatin/Carboplatin**
    - **Stable disease, PR or CR after 4 cycles**
    - **Progression**
    - **Atezolizumab + Bevacizumab**
    - **PD-L1 > 50% PS 0-1, and suitable for immunotherapy**
    - **Pembrolizumab**
    - **Progression**
    - **Pemetrexed & Cisplatin/Carboplatin**
    - **Stable disease, PR or CR after 4 cycles**
    - **Progression**

Any immunotherapy funded to a maximum of 2 years, or 35 x 3-weekly cycles, or 17 x 6-weekly cycles

**Version:** 17  
**Approved by Consultant Oncologist:** Dr V Ezhil  
**Reason for update:** Atezo, bev, paclitaxel & carbo regimen added  
**Approved by Consultant Oncologist:** Dr A Mehta  
**Prepared by:** S Taylor  
**Date:** 16.5.19
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b) NSCLC, EGFR+ve

- **NSCLC, EGFR +ve**
  - Afatinib
  - Gefitinib
  - Erlotinib
  - Re-biopsy at progression should always be considered

  - **T790M mutation**
    - Osimertinib

  - **No T790M mutation**
    - **Options are:**
      - Pemetrexed + Cisplatin/Carboplatin
        - followed by (if stable disease, PR or CR)
        - Pemetrexed maintenance
      - Atezolizumab, Bevacizumab, Paclitaxel & Carboplatin
        - Stable disease, PR or CR after 4 cycles
        - Atezolizumab + Bevacizumab
        - Docetaxel (+ Nindetanib if adeno) or BSC
      - Pembrolizumab
        - (PD-L1 ≥ 1%)
      - Atezolizumab
        - (no minimum PD-L1)

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c) NSCLC, ALK+ve

NSCLC, ALK +ve

Alectinib

Intolerance to Alectinib, but no PD

Ceritinib

or

Crizotinib

Some remaining patients already started 1st line Crizotinib

Progressive disease

Check for any available compassionate use schemes for ALK inhibitors before proceeding to chemotherapy

Options are:

Pemetrexed + Cisplatin/Carboplatin

followed by (if stable disease, PR or CR)

Pemetrexed maintenance

Pembrolizumab (PD-L1 ≥ 1%)

or

Atezolizumab (no minimum PD-L1)

or

Docetaxel (+ Nindetanib if adeno)

Atezolizumab, Bevacizumab, Paclitaxel & Carboplatin

Stable disease, PR or CR after 4 cycles

Atezolizumab + Bevacizumab

Docetaxel (+ Nindetanib if adeno) or BSC

Progressive disease

Brigatinib

or

Ceritinib

Blueteq registration required

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d) Squamous NSCLC

[Squamous NSCLC diagram]

- **PD-L1 ≥ 50%**
  - Pembrolizumab
  - Platinum + Vinorelbine
  - Platinum + Gemcitabine

- **PD-L1 < 50%**
  - Pembrolizumab (PD-L1 ≥ 1%)
  - Atezolizumab (no minimum PD-L1)
  - Nivolumab (no minimum PD-L1)

- **Platinum + Vinorelbine or Platinum + Gemcitabine**

- **Docetaxel or Erlotinib** (only if delayed confirmation that EGFR+ve, or if EGFR status unknown but considered likely to be +ve)
  - or BSC

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