



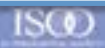
2018

28-30 JUNE
VIENNA, AUSTRIA

SUPPORTIVE CARE
MAKES EXCELLENCE
CANCER CARE POSSIBLE



MASCC
ANNUAL MEETING



Timing of empirical Computerized tomography

Timing of empirical Computerized tomography
imaging of chest in children with high risk febrile
neutropenia- should delayed imaging be preferred?

Jaikumar Ramamoorthy, Venkatraman Radhakrishnan,
Prof.T.G. Sagar
Department of Medical Oncology, Cancer Institute, Adyar,
Chennai, India



Disclosure



- Nothing to disclose



Introduction



- Infection (IFI) major roadblock for cure in paediatric leukaemia
- Chest - most common site of occult infection in febrile neutropenia episode (FNE)- 35% of treatment related mortality
- Recommendation-CT chest scan after 96 hours of persistent fever in high risk FNE
- Empirical CT chest imaging had 52% positivity rate- after first week of FNE
- Should the timing of imaging be delayed?

Dornbusch et al ESCMID guidelines for diagnosis of invasive fungal infections 2010

Lehrnbecher et al guidelines for management of febrile neutropenia 2017

David o Connor et al infection related mortality in UK ALL 2003

Is routine computed tomographic scanning justified in the first week of persistent febrile

www.mascc.org/meeting

neutropenia in children with malignancies? Agrawal et al PBC 2011



Aims and objectives



- To determine the ideal timing
 - Empirical CT imaging of chest in high risk FNE



Methodology

- Retrospective analysis- children with ALL with FNE Jan 2013- Dec 2014
- Empirical initiation of anti fungal treatment was practiced
- Children with CT imaging chest in study period enrolled
- Non-empirical CT imaging-
 - Presence of respiratory symptoms and signs
 - Positive X-ray finding
 - Positive serum galactomannan
- Empirical CT imaging- none of the above present



Results

- 194 children with ALL were treated
 - 42 children underwent CT imaging of chest (8 children imaged twice for different FNE)
 - 50 Chest imaging were performed-
 - 23 (46%) were empirical imaging
 - 27 (54%) were non-empirical
 - Median day of FNE to perform CT chest imaging-
 - Empirical 8 (IQR 5.5-12) days
 - Non-empirical 5 (IQR 4.25-8) days
 - Abnormality in CT chest imaging
 - 16/23 (70%) in empirical group
 - 20/27 (74.1%) in non-empirical group



Results- abnormal empirical imaging (n=16/23)

- Imaging findings-
 - Pulmonary nodules -11
 - Consolidation -2
 - Lung abscess-1
 - Cavity formation -1
 - Air crescent sign-1



Results- empirical imaging (n=23)

- Day of FNE at the time of empirical CT imaging
 - Abnormality in scan-10.5 (IQR 7.5-12.25) days
 - Normal scan-6 (IQR 5-10) days
- > 7 days of FNE at the time of empirical imaging
 - 11/15 (74%) had abnormality in imaging
- <8 days of FNE at the time of imaging
 - 5/8 (62.5%) had abnormality in imaging



Results- empirical imaging (n=23)

- Association between abnormality in empirical CT chest imaging and CT imaging after day 7 of FNE
 - P value =0.048
- Outcome of FNE
 - 17 surviving
 - 4 died secondary to septicemia (2- klebsiella, 2- E.coli)
 - 2 relapsed



Conclusion

- In setting with empirical treatment escalation
- **Empirical CT imaging of chest can be performed after 7 days of FNE**
 - Reduce the rate of negative imaging and radiation exposure
- Limitations-
 - Retrospective analysis
 - Small sample size
 - Needs prospective evaluation

