WEBINAIRE DES « Maladies Infectieuses et Tropicales » Octobre 2025
Séminaire n° 1 – Thématiques 9, 12, 14, 16 et 19

Infections virales respiratoires chez les immunodéprimés (hors SARS-CoV-2)

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Département des Maladies infectieuses et tropicales, CHU de Lyon, France

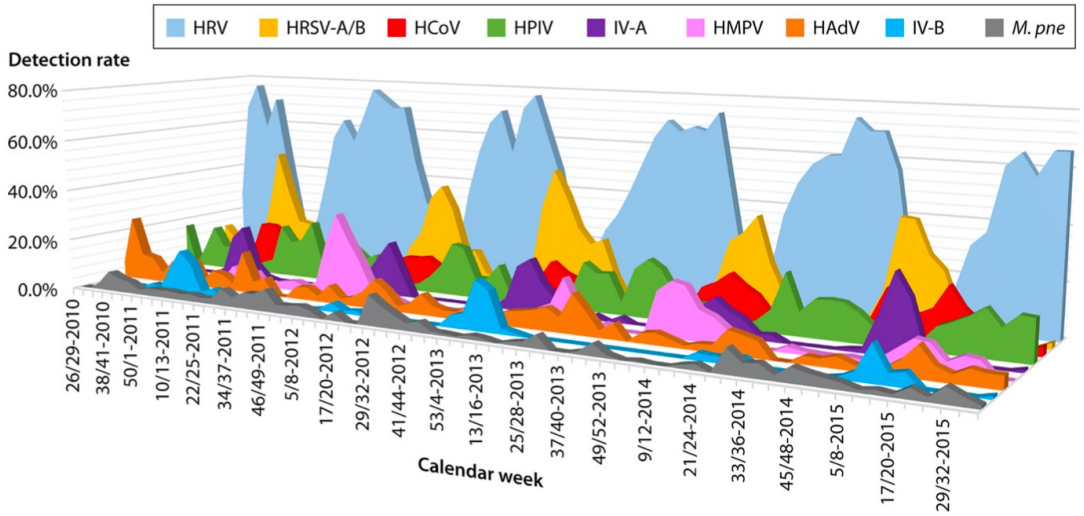
Déclaration de liens d'intérêt avec les industriels de santé
en rapport avec le thème de la présentation (loi du 04/03/2002) :

- Intervenant : ADER Florence
- Titre : Infections respiratoires virales chez les immunodéprimés

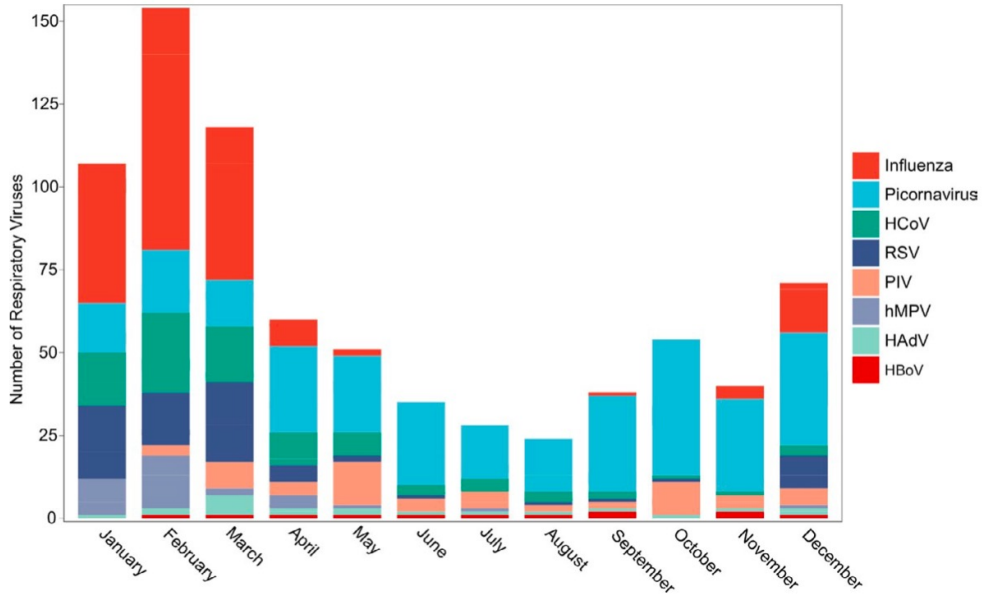
• Consultant ou membre d'un conseil scientifique	**NON**
• Conférencier ou auteur/rédacteur rémunéré d'articles ou documents	**NON**
• Prise en charge de frais de voyage, d'hébergement ou d'inscription à des congrès ou autres manifestations	**NON**
• Investigateur principal d'une recherche ou d'une étude clinique	**NON**

Community-acquired respiratory viruses (CARV)

General population

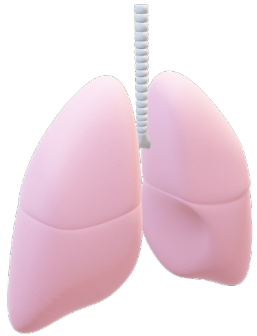


Solid organ transplantation



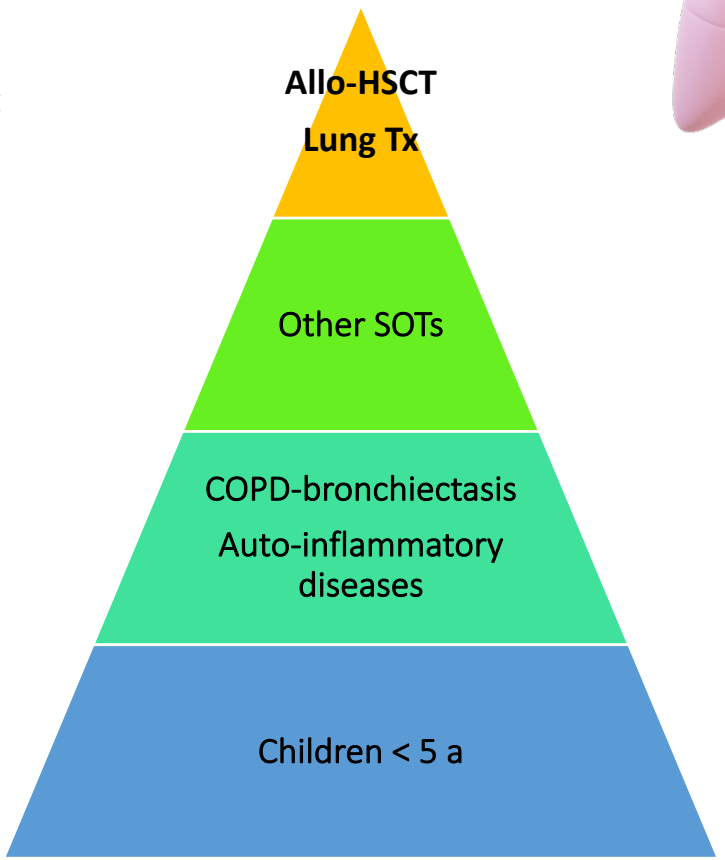
Seasonality	
Fall ---- > winter	Influenza virus (IV) A/B, HRSV, Metapneumovirus (HMPV)
Spring, summer --- > fall	Picornavirus/Rhinovirus (HRV), CoV, Parainfluenza virus (HPIV)

Ison MG, Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19
Jain S,; CDC EPIC Study Team. N Engl J Med. 2015. doi: 10.1056/NEJMoa1500245
Mombelli M, et al; Swiss Transplant Cohort Study. Am J Transplant. 2021. doi: 10.1111/ajt.16383.

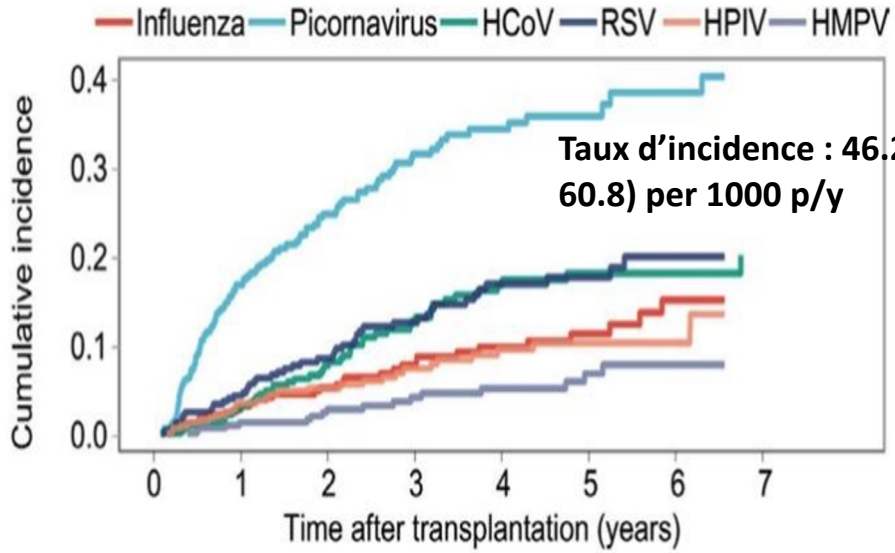


Highest impact

Lowest impact



Lung Tx: overall post-transplant survival **6.2 y**



Allograft rejection

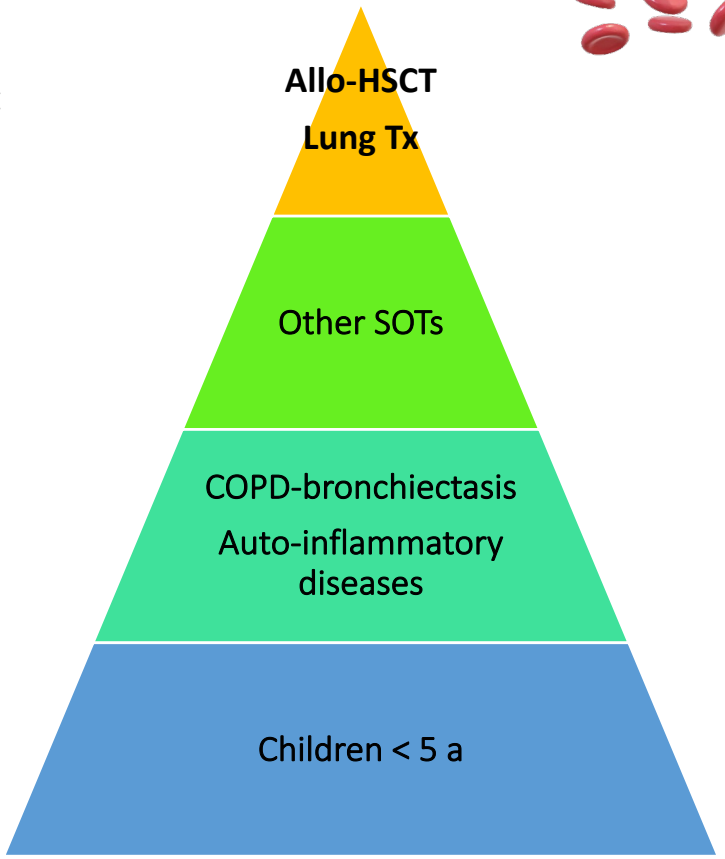
Bronchiolitis obliterans
& chronic lung allograft dysfunction

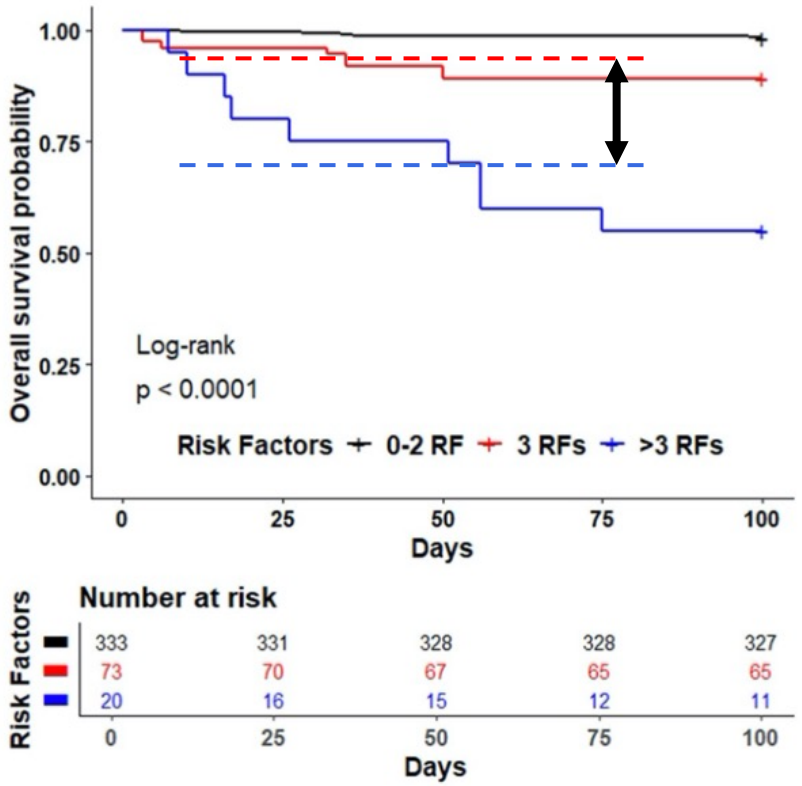
Ison MG, Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19
Mombelli M, et al; Swiss Transplant Cohort Study. Am J Transplant. 2021. doi: 10.1111/ajt.16383
van der Mark SC, et al. Eur Respir Rev. 2020. doi: 10.1183/16000617.0132-2019

Allo-HSCT, n= 426 – 1070 CARV episodes
Lower RTD progression rate = 26%
All-cause mortality rate at day 100 = 5%

Highest impact

Lowest impact



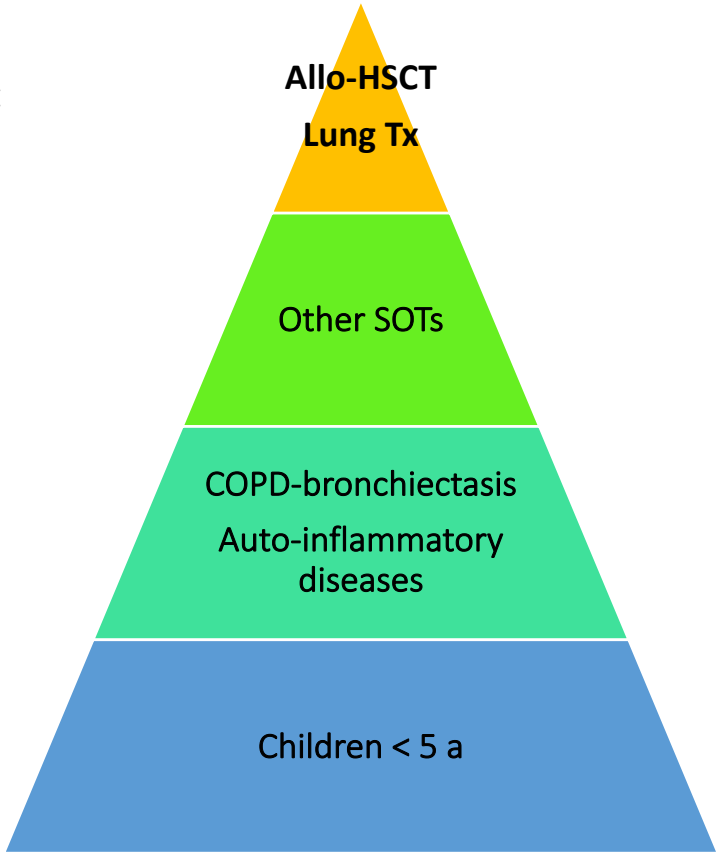


Overall survival probability at day 100 after CARV detection in allo-HSCT recipients with lower RT disease according to risk factors :

- Donor/recipient HLA mismatch
- CST use
- GvHD
- ALC < 0.1
- Neutropenia
- Age ≥ 40y

Piñana JL, et al. Clin Infect Dis. 2024 doi: 10.1093/cid/ciae602

Highest impact

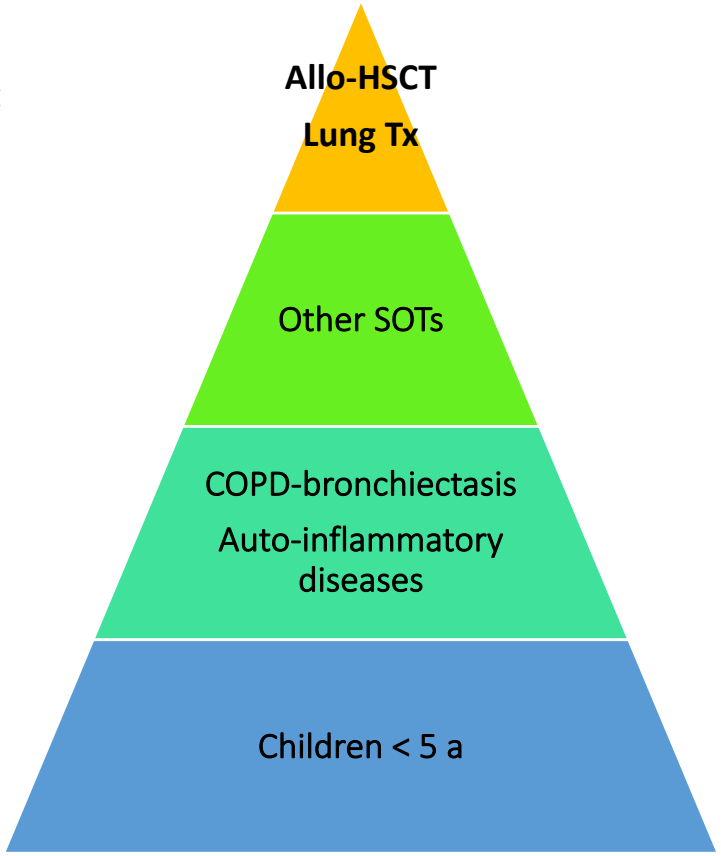


Lowest impact

➡ Key factors influencing net immune status

Highest impact

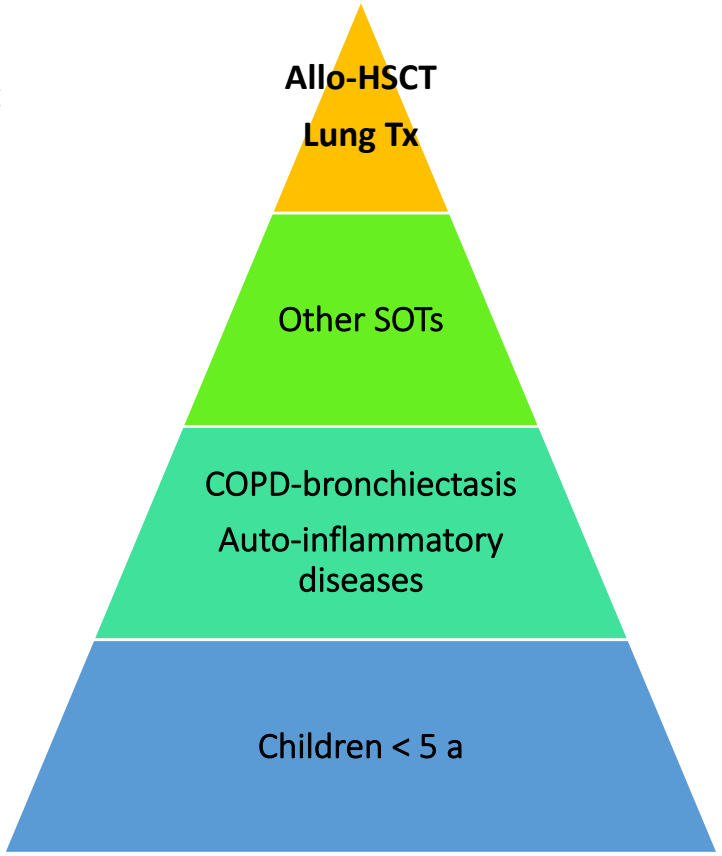
Lowest impact



At transplantation

- Age (threshold 40 yr)
- Multiple transplants
- End-organ disease
- Malnutrition
- Conditioning
- Graft source
- Related *vs*. unrelated (HLA mismatch)
- Receipt of lympho-depleting agents

Highest impact



Lowest impact

Post-transplantation

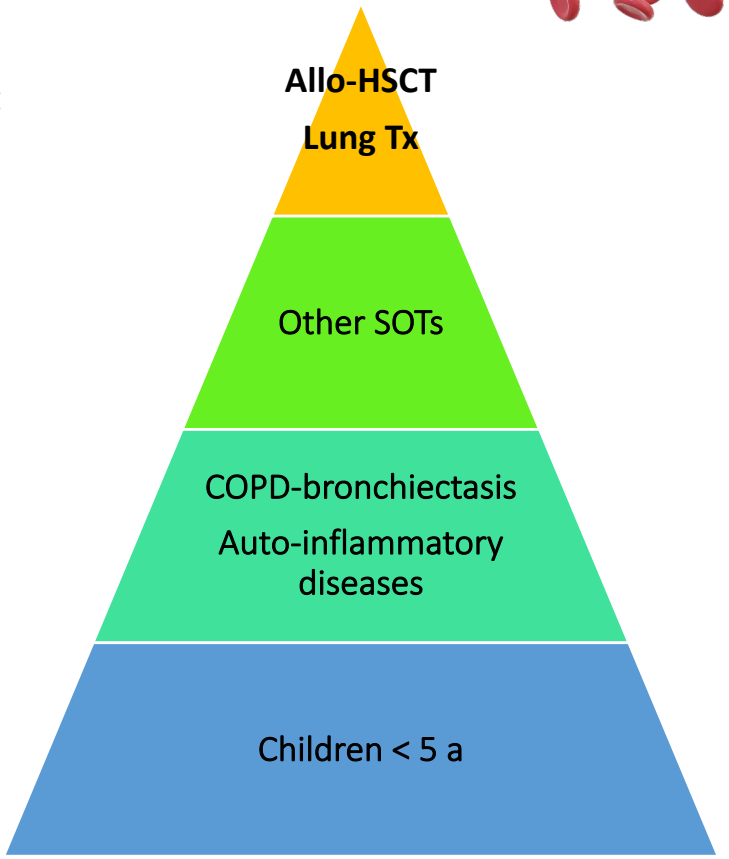
Time from transplantation (< 6 m.)
Age and malnutrition
IS regimen <---> anti-donor/graft immunity
Hypogammaglobulinemia (HSCT)
Slow/poor immune reconstitution

Noell BC, et al. Transplant Proc. 2013. doi: 10.1016/j.transproceed.2012.11.010

Allo-HSCT with CARV (RSV, PIV, MTPv and Influenza A/B) at risk for progression from upper RTI to lower RTD

Highest impact

Lowest impact



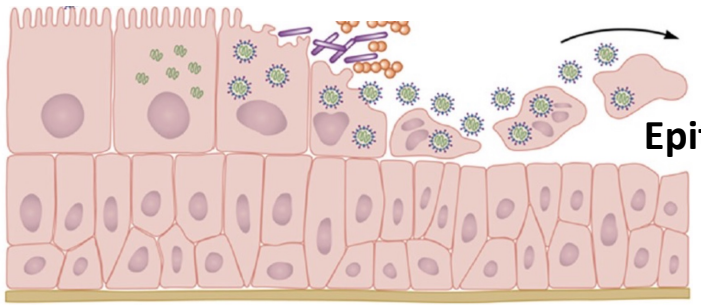
Allo-HSCT – Immunodeficiency Scoring Index	
Criterion or parameter	
Neutropenia, <0.5x10^9 /L	3
Lymphopenia, <0.2x10^9 /L	**3**
Myeloablative conditioning	1
Pre-engraftment or allo-HCT < 1 month	1
GvHD (acute/chronic)	1
Corticosteroids	1
Age, > 40 yr	2
Maximal	12

Stratification	
Low risk	0-2
Moderate risk	3-6
High risk	7-12

+ multiple transplants

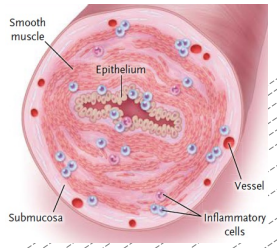
Houist AL, et al. Bone Marrow Transplant. 2021 doi: 10.1038/s41409-021-01462-z
Shah DP, et al. Blood 2014. doi: 10.1182/blood-2013-12-541359
Ogimi C, et al. Bone Marrow Transplant. 2022 doi: 10.1038/s41409-022-01575-z.
Micó-Cerdà M at al. Transplant Cell Ther. 2025 doi: 10.1016/j.jtct.2025.02.012.

Protracted viral shedding



Epithelial cell necrosis

Mucus plugging



Bronchiolitis obliterans (BOS) syndrome
Lung Tx = Chronic lung allograft dysfunction (CLAD)
Allo-HSCT = Chronic GvHD

Peribronchial infiltrates

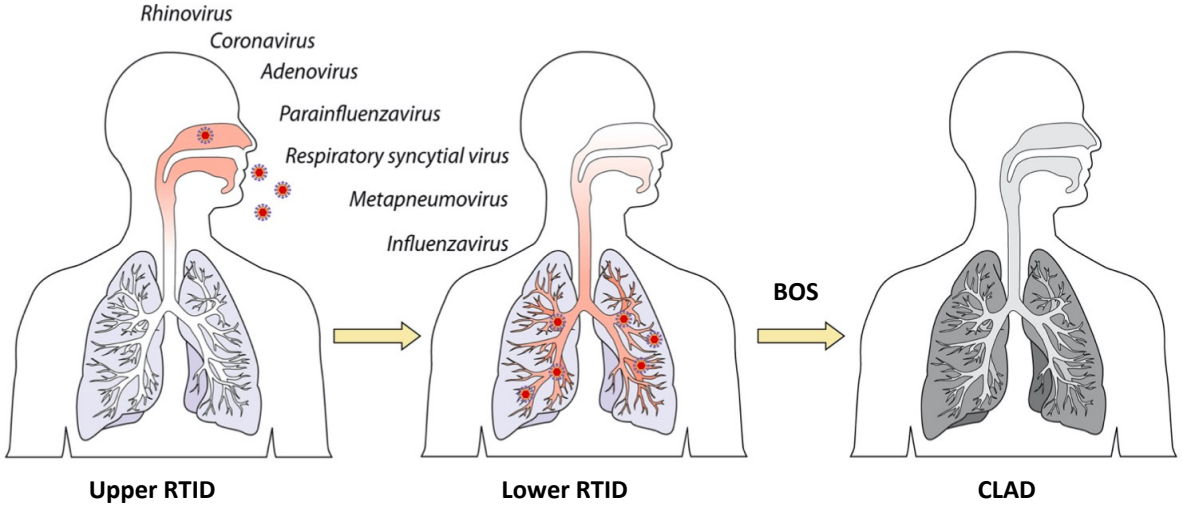
Lymphopenia => defect in :

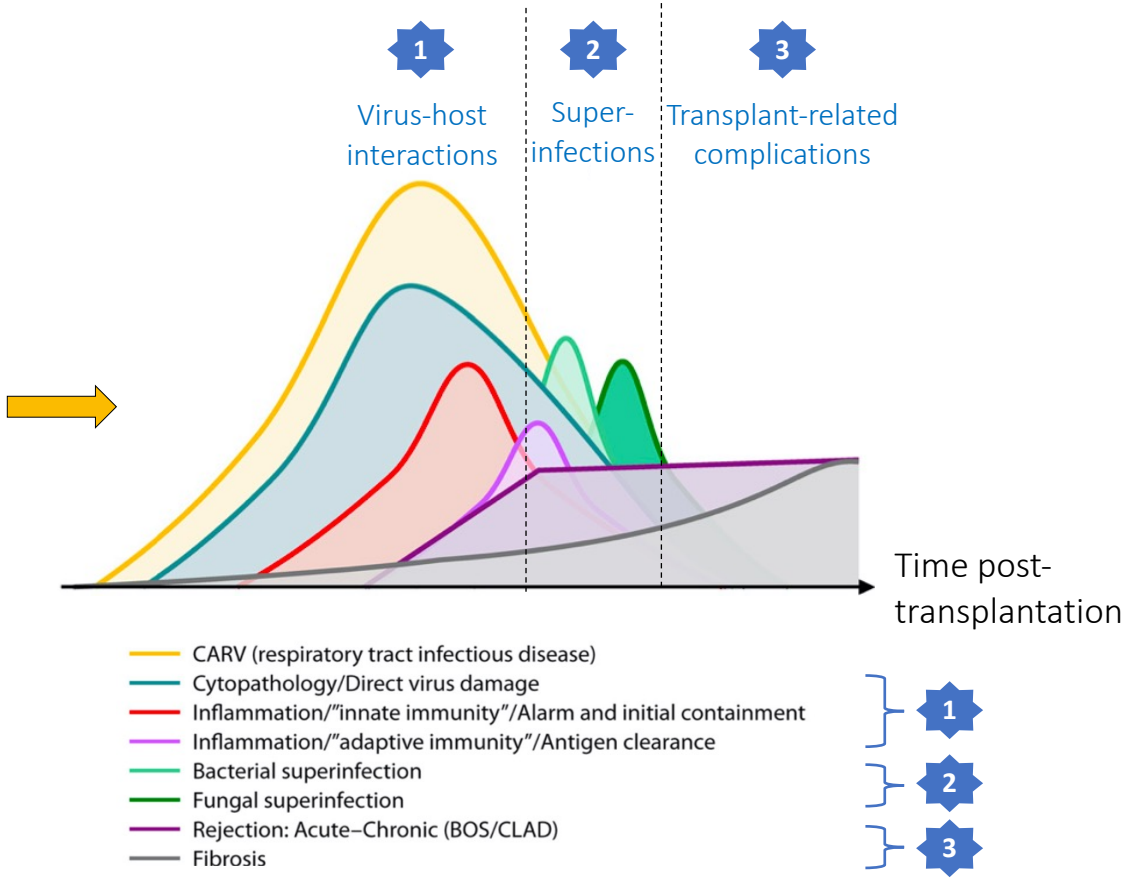
1. $CD4^+$ T cell-driven coordinated adaptive response
2. T/B cooperation --- > less high-affinity nAb --- > less NK cell-mediated ADCC
3. Cytotoxic T cell $CD8^+$ activity ---- > less cytolysis of infected cell and less viral clearance

Immune unbalance toward allo-immunity

Hypoxia^{++}

Adapted from various sources :
Griffiths C, Drews SJ, Marchant DJ. Clin Microbiol Rev 2017. doi: 10.1128/CMR.00010-16
Barker AF et al. New Eng J Med 2014. doi: 10.1056/NEJMra1204664
Janeway's Immunobiology. Kennet Murphy. 10th edition, 2022. Taylor & Francis





Adapted from various sources :Ison MG & Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19

Diagnosis work up

Direct antigen detection (DAD) = lower sensitivity compared to CARV-NAT and reduced specificity in low prevalence setting, but if used for rapid (self-) testing, the result should be discussed with referent physician to evaluate the consequences for care including the need of early antivirals or for confirmation by NAT. **AII**

ENT symptoms/cough/fever

Naso-pharyngeal swab

Negative NPS + highly suggestive clinical presentation

BAL fluid

M. pneumoniae

Nucleic acid testing (NAT) AII

Multiplex NAT kit (RhinoV, Influenza A/B, RSV, hMTP, PIV, CoV,..)

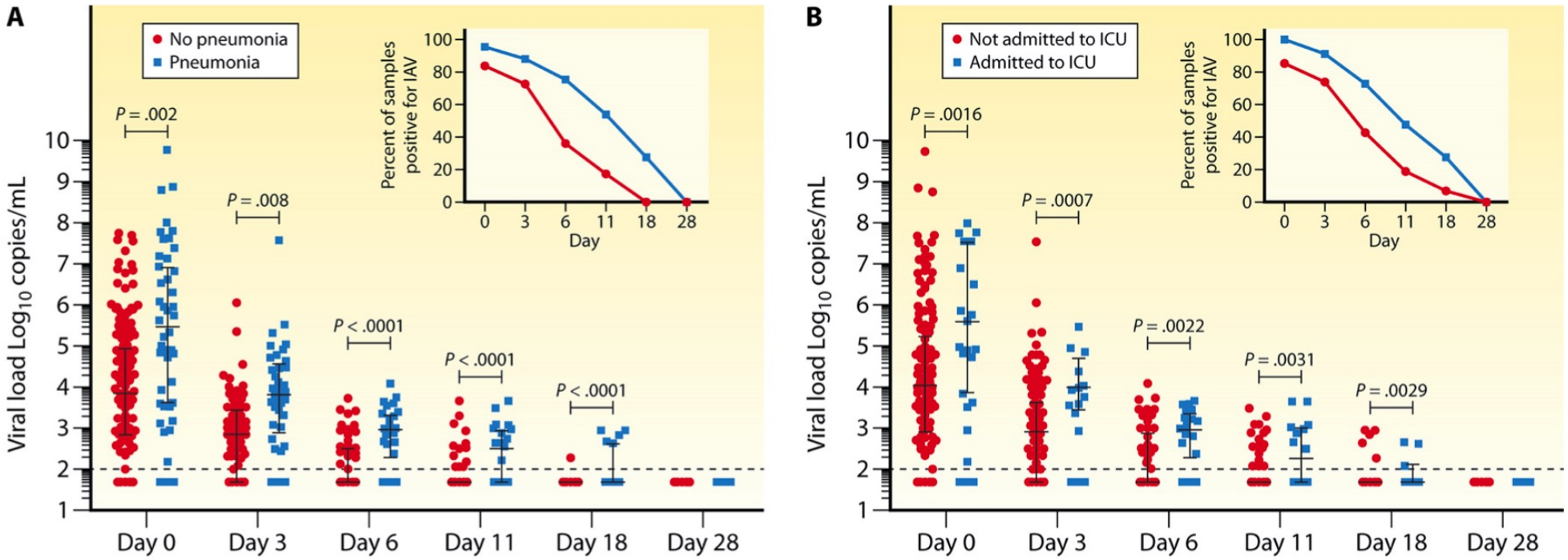
Turn-round time **< 2 hours** are preferred

(Semi-)quantitative NAT => [Cycle threshold] CIII

Center-dpdt – can be considered to follow the course of viral replication

Adapted from ECIL10 Sept 2024 update of 2019 guidelines https://www.ecil-leukaemia.com/en/resources/resources-ecil

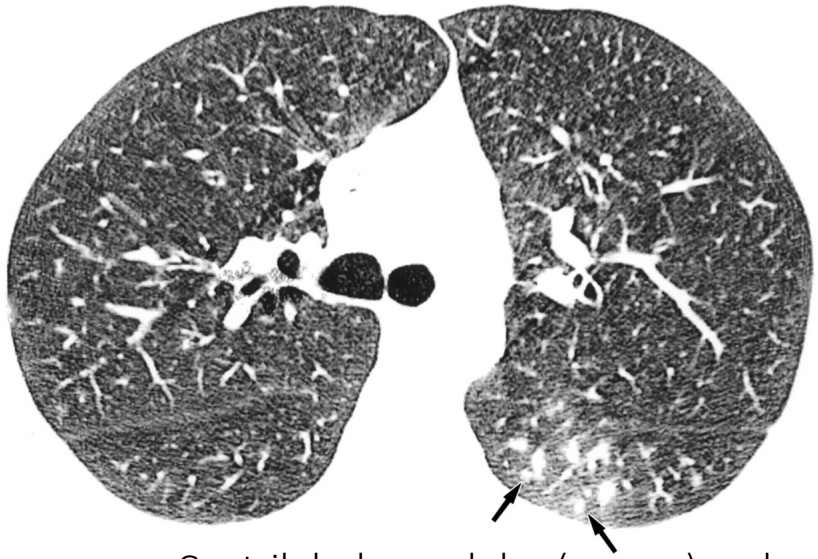
5 consecutive **influenza** seasons
n=616 transplant recipients infected with influenza
SOT, n=477; HSCT recipients, n=139



Adapted from Kumar D, et al. A 5-year prospective multicenter evaluation of influenza infection in transplant recipients. Clin Infect Dis 2018; 67:1322–1329. https://doi.org/10.1093/cid/ciy294
Ison MG, Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19

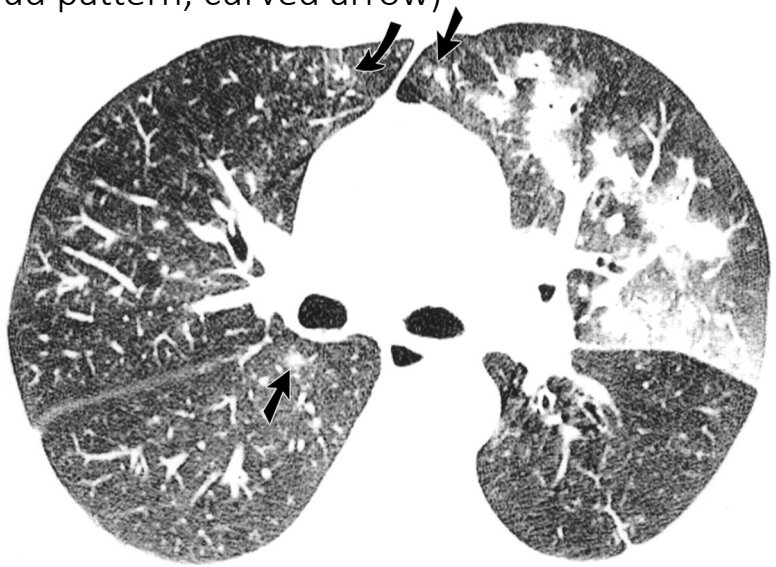
Imagery work up ----- > [HR] CT scan

Patches of **ground glass opacities**
Airway inflammatory changes such as **tree-in-bud opacities** (20-50%), **bronchial wall thickening** (30-70%), **centrilobular nodules** (35-60%) and **peribronchiolar consolidation** (~ 50%) are associated with CARV LRTD.
Multifocal consolidation is commonly found in cases of CARV LRTD but is **non-specific**.



Centrilobular nodules (arrows) and adjacent ground-glass opacities

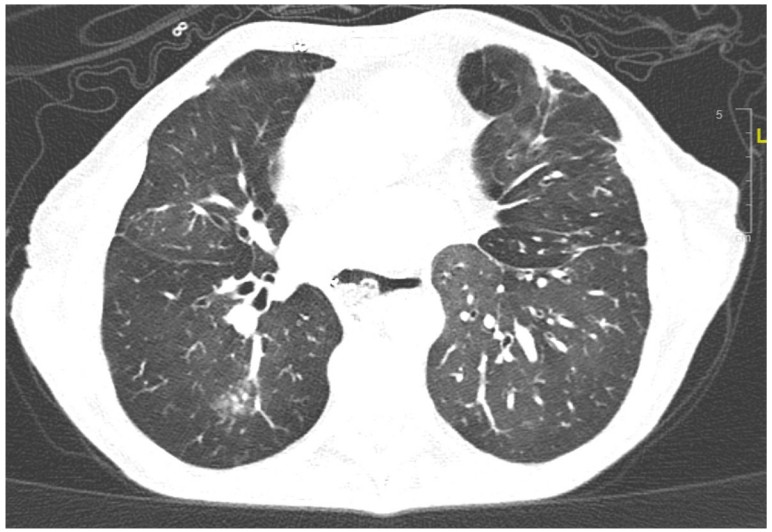
Centrilobular branching nodular opacities (tree-in-bud pattern, curved arrow)



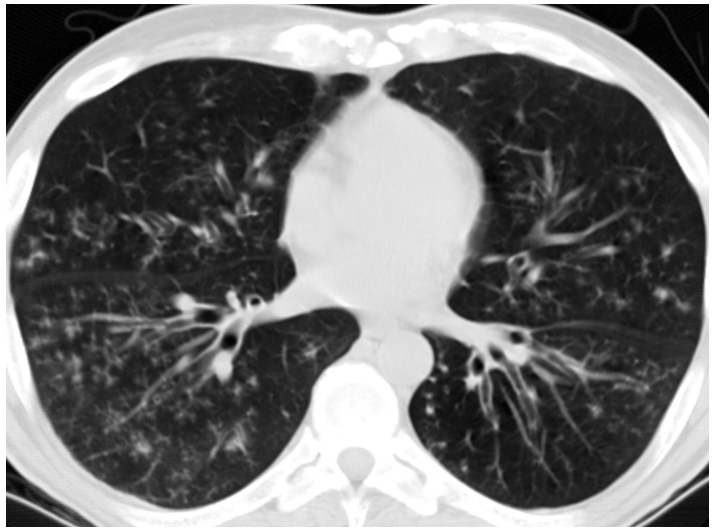
Ground-glass opacities and dense focal areas of consolidation

Centrilobular nodules (straight arrows)

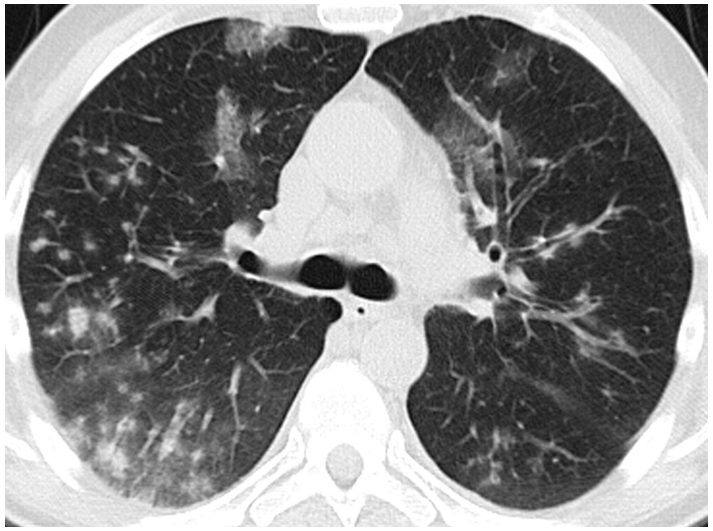
Gasparetto et al. AJR Am J Roentgenol. 2004 doi: 10.2214/ajr.182.5.1821133
Miller WT Jr et al. J Comput Assist Tomogr. 2011 doi: 10.1097/RCT.0b013e31821d6cd3
Kim MC, et al. Medicine (Baltimore). 2016 doi: 10.1097/MD.0000000000004003



Lung Tx – RSV LRTD

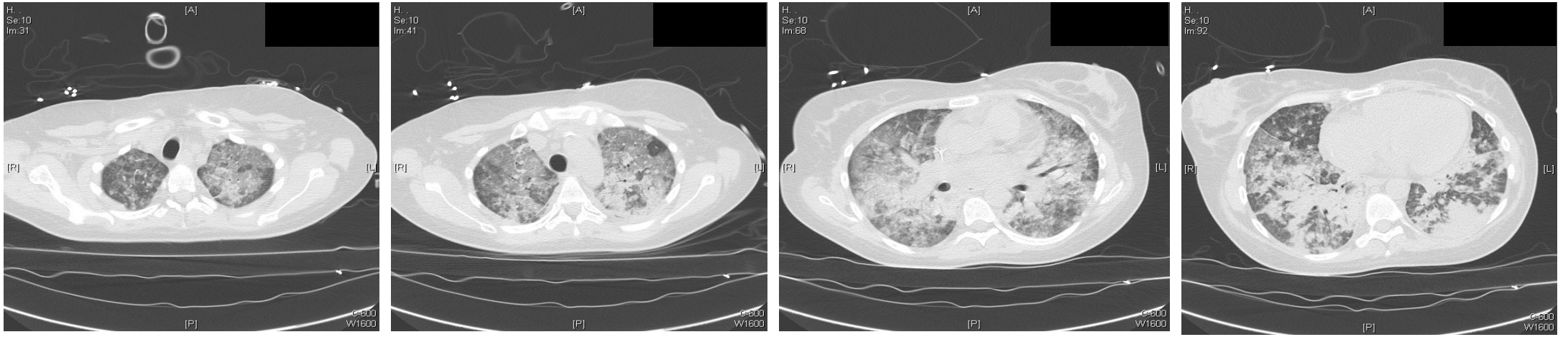


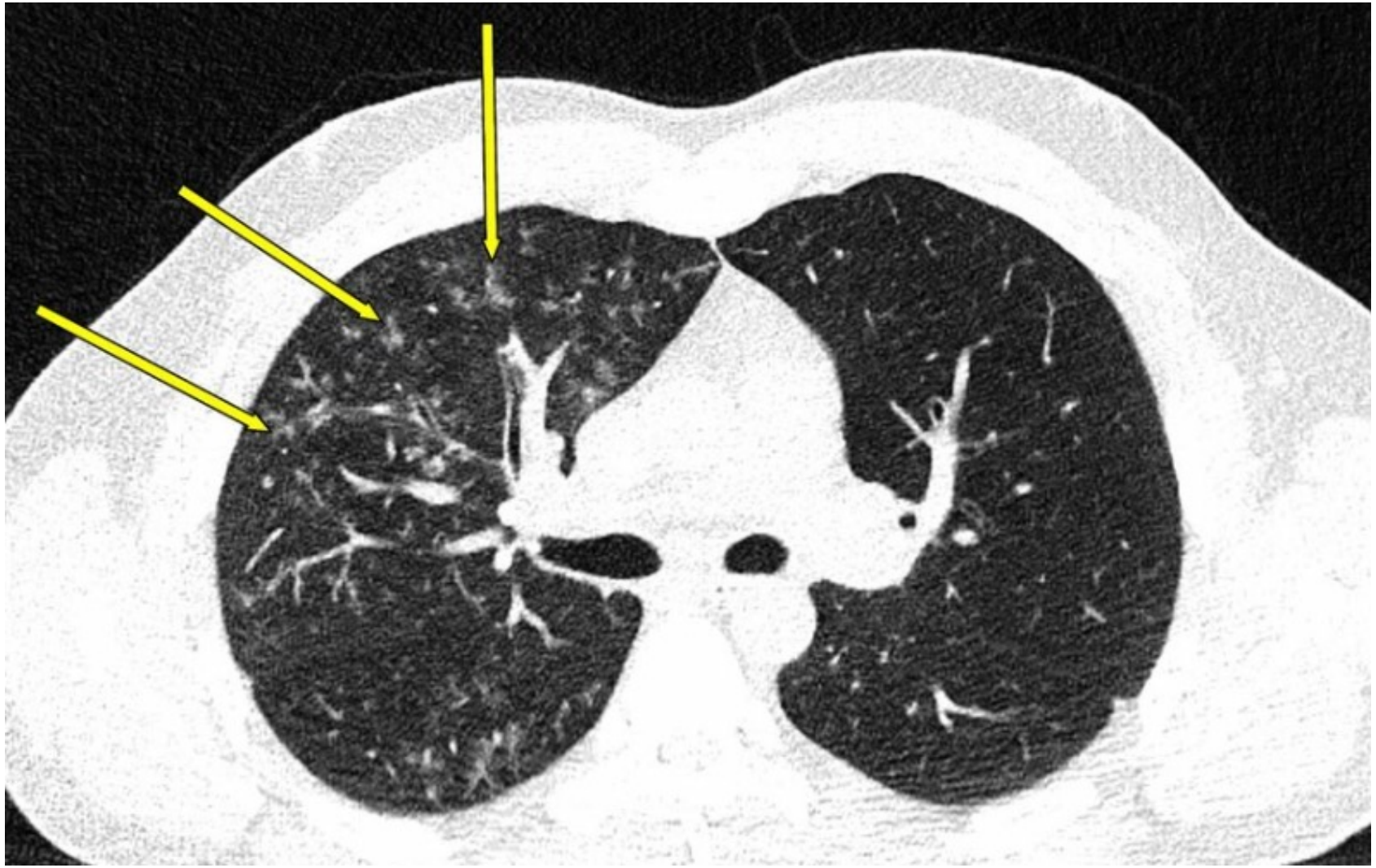
Allo-HSCT – Influenza LRTD



Allo-HSCT – RSV LRTD

Allo-HSCT day 10 post-transplantation – RSV ARDS





Drst, Lukas, Fehr, Thomas, Cusini (2022). Infections à Mycoplasma pneumoniae

Upper respiratory tract infection (URTI)

- detection of repiratory virus in a respiratory sample

AND

- at least one of: new onset of cough, or sore throat, or shortness of breath, or coryza, or fever, or nasal congestion

AND

- clinician judgement that the illness was due to the infection

AND

- **NO** criteria for LRTD

Lower respiratory tract disease (LRTD)

- detection of respiratory virus in a respiratory sample

AND

- at least one of: new onset of cough, sore throat, shortness of breath, coryza, or fever

AND

- clinician judgement that the illness was due to the infection

AND

- at least one of:
  - **hypoxia** defined as oxygen saturation **<90%** or need for supplemental oxygen,
  - or **radiologic infiltrate(s)**,
  - or detection of **respiratory virus in a LRT** sample

Upper respiratory tract infection (RTI) at **high-risk of progression** to lower RT disease (20-30%)

Determinants of decision making

Type of transplantation [Allo-HSCT, lung Tx]

Time after transplantation

IS regimen

GvHD/acute-chronic rejection

Lymphopenia/neutropenia

⬇

Timing of decision^{+++}

Treat **ALL** lower RT diseases

DIRECT-ACTING ANTIVIRALS

?

IMMUNOGLOBULINS

?

CORTICOSTEROIDS

?

VIRUS-SPÉCIFIC mAbs

Data on adjuvant treatments: IV Igs or corticosteroids ?

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DOI: 10.1111/tid.14142

EDITORIAL

The role of systemic steroids in lung transplant recipients with community-acquired respiratory viruses: Time for a moratorium, or not?

Courtesy of Dr Lorena van den Bogaart
Hospices Civils de Lyon

Influenza : therapeutic algorithm

HSCT (allo)/influenza+

Pre-exposure prophylaxis **BIII**
Inpatients – nosocomial outbreak
Oseltamivir 75 mg BID – 5d

Post-exposure prophylaxis **AII**
Oseltamivir 75 mg BID – 5d

RT Infection/Disease

CT scan

Co/super-INFECTION(S) ?

NAT monitoring
Genotypic resistance testing

1st line : oseltamivir* 75 mg BID from 5 to 7d BII

Positive NAT ≥ 7d ---- > continue oseltamivir up to 10 d **BIII**
Symptomatic ≥ 7d ---- > continue oseltamivir until undetectability **CIII**
Severe LRTD from the start : consider x2 = > 150 mg BID **CIII**

2d lines = 2 scenarii

- Prolonged severe LRTD : consider +baloxavir **BIII**
- Impaired gastro-intestinal absorption/no oral ingestion : switch to IV zanamivir or IV peramivir if available **CIII**

* Full dose oseltamivir 75 BID > 40 kgs

Kumar et al. Clin Infect Dis. 2018 doi: 10.1093/cid/ciy294
Adapted from ECIL10 Sept 2024 update of 2019 guidelines https://www.ecil-leukaemia.com/en/resources/resources-ecil
von Lilienfeld-Toal M et al. Lancet Infect Dis 2025. 2025 Aug 27:S1473-3099(25)00365-2. doi: 10.1016/S1473-3099(25)00365-2.

Inactivated Influenza Vaccine (IIV)

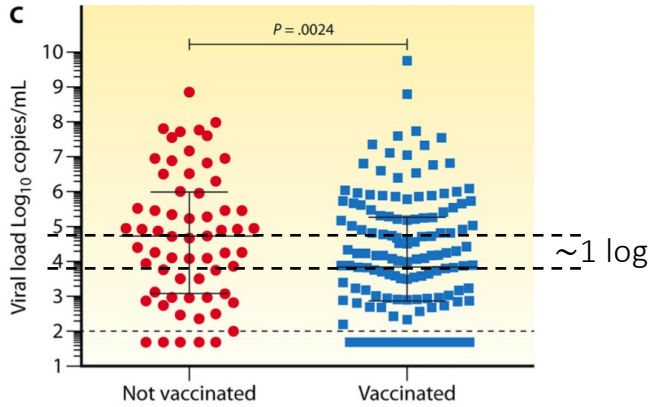
Risk Factor	No.	Pneumonia (n = 134)	No Pneumonia (n = 472)	*P* Value (Univariate)	Multivariate OR (95% CI)	*P* Value (Multivariate)
Influenza vaccination in the same season	543	63/119 (52.9)	306/416 (73.6)	**<.001**	0.34 (.21–.55)	**<.001**

Annual seasonal **IIV** is recommended to be given at the beginning of influenza season for all patients at **3 to 6 months** post-transplant. **AII**

Vaccination should be continued on a yearly basis. **AII**
+ vaccinations of **household individuals**

High-dose trivalent IIV-A/B is recommended for **allogeneic** HSCT-patients. **AII**

A **2nd dose after 4 weeks** may have a benefit **BIII** and should be considered in patients with **severe GvHD**, **low lymphocyte counts**, or during a prolonged **community outbreak**.



Kumar et al. Clin Infect Dis. 2018 doi: 10.1093/cid/ciy294
Ison MG, Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19
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von Lilienfeld-Toal M et al. Lancet Infect Dis 2025. 2025 Aug 27:S1473-3099(25)00365-2. doi: 10.1016/S1473-3099(25)00365-2.

STOP Flu Trial

Target population = **SOT**
High-dose *vs* MF59-**adjuvanted** *vs* **standard** influenza vaccine – 1:1:1
Primary outcome : **vaccine response rate at day 28** = > proportion of seroconversion for at least 1 viral strain (at least 4-fold increase of HAI titer from baseline)

	Vaccine Response Rate	Risk Difference	*P* Value
High-dose and MF59-adjuvanted versus standard vaccine[a]	63% (251/400) versus 42% (84/198)	0.20 (97.5% CI, .12–1)	<.001
High-dose versus standard vaccine[a]	66% (129/195) versus 42% (84/198)	0.24 (95% CI, .16–1)	<.001
MF59-adjuvanted versus standard vaccine[b]	60% (122/205) versus 42% (84/198)	0.17 (97.5% CI, .08–1)	<.001
High-dose versus MF59-adjuvanted vaccine[b]	66% (129/195) versus 60% (122/205)	0.07 (95% CI, −.01 to 1)	.085

Mombelli M et al. Clin Infect Dis. 2024 doi: 10.1093/cid/ciad477

RSV : therapeutic algorithm

Palivizumab could be considered as **post-exposure prophylaxis** in severely immunodeficient adults when **nosocomial outbreak** is occurring. **CIII**

Allo-HSCT/VRS+

CT scan (no contrast)

Upper RT Infection

Allo-HSCT
(risk factors)
Lung Tx

Oral or IV RIBAVIRIN
Ig G < 4.5 g/L --- > IV Igs 0.5 mg/kg x 3 **BIII**
Lower or no corticosteroids **CIII**

Auto-HSCT
Other than lung Tx

No first-hand DAAVT
But surveillance

DAAVT: direct-acting antiviral treatment

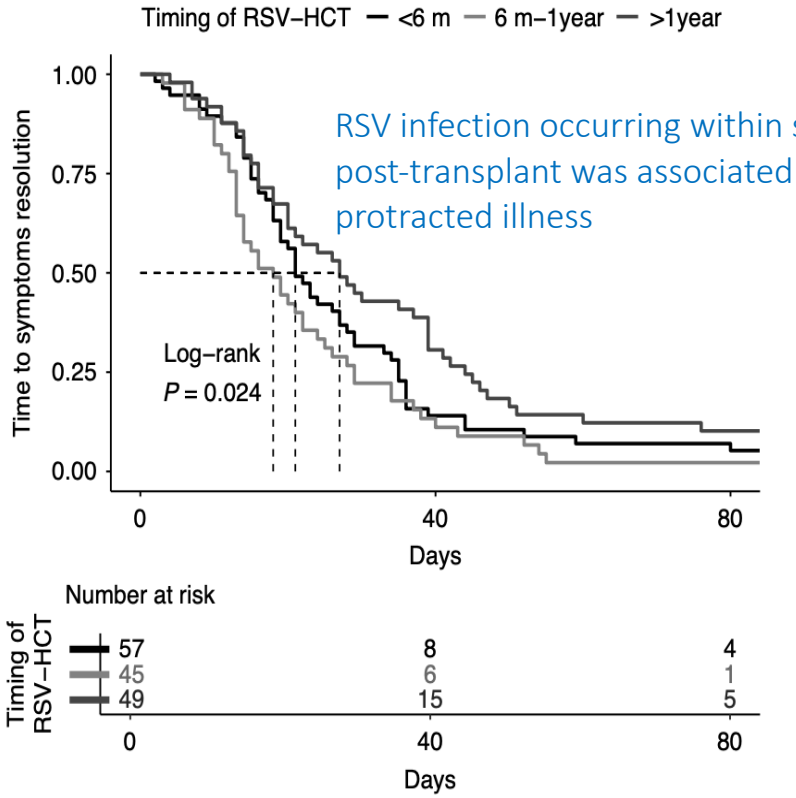
Lower RT Disease

HSCT
Lung Tx
Other than lung Tx

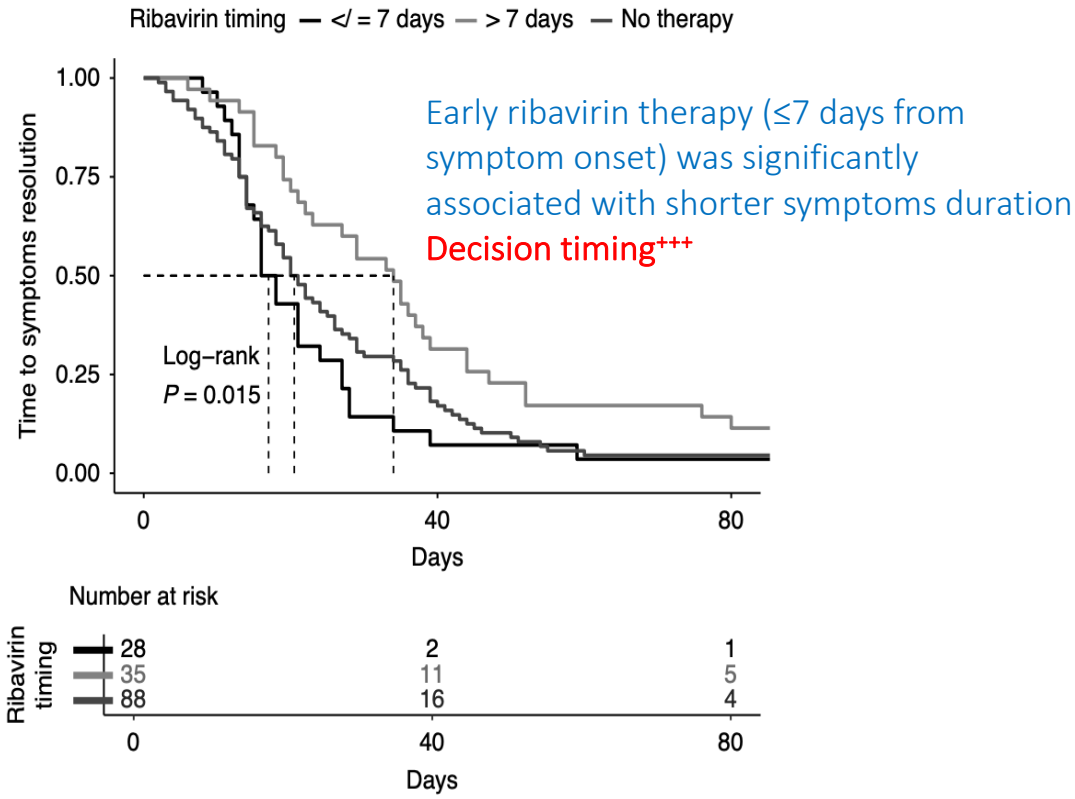
IV RIBAVIRIN
7 to 10 days
Ig G < 4.5 g/L --- > IV Igs 0.5 mg/kg x 3 **BIII**
Lower or no corticosteroids **CIII**

NAT monitoring

ECIL10 Sept 2024 update of 2019 guidelines https://www.ecil-leukaemia.com/en/resources/resources-ecil
von Lilienfeld-Toal M et al. Lancet Infect Dis 2025. 2025 Aug 27:S1473-3099(25)00365-2. doi: 10.1016/S1473-3099(25)00365-2



RSV infection occurring within six months post-transplant was associated with protracted illness

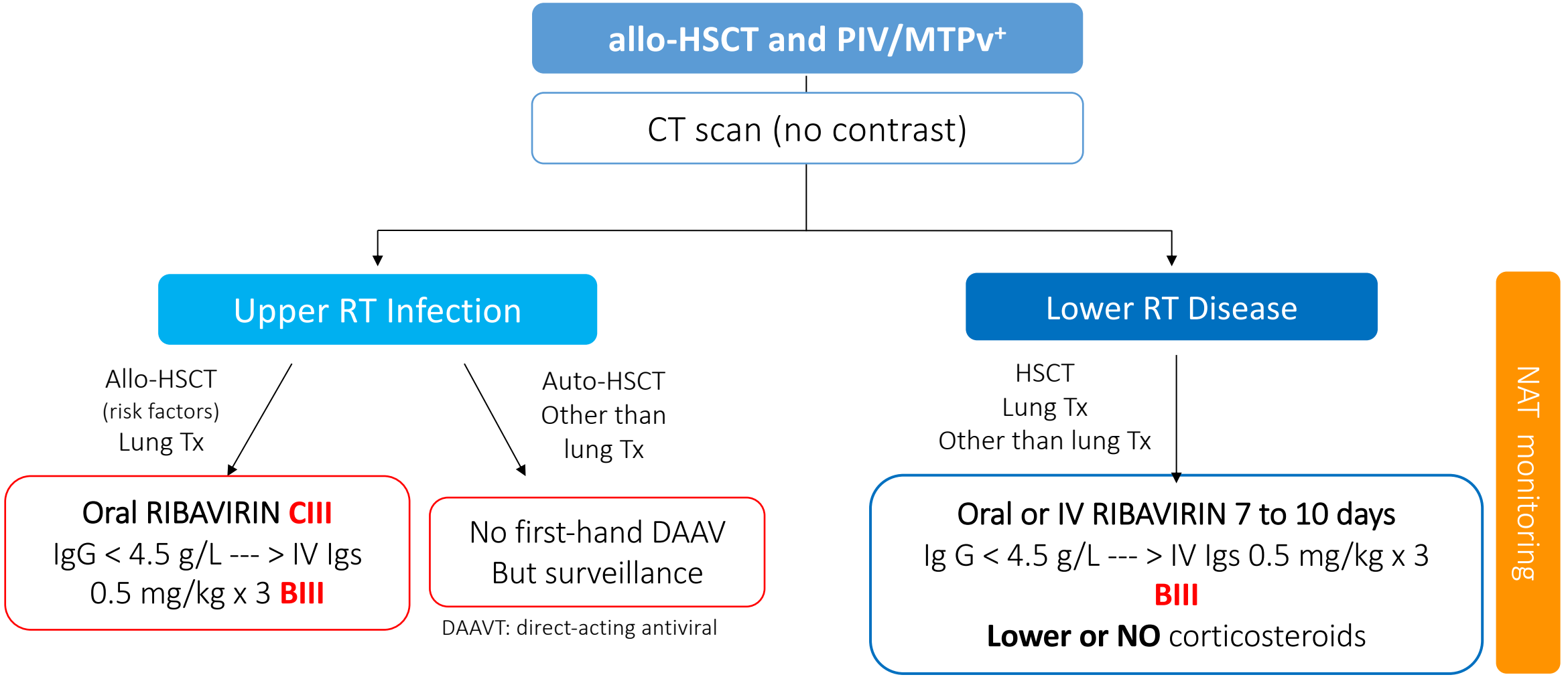


Early ribavirin therapy (≤7 days from symptom onset) was significantly associated with shorter symptoms duration

Decision timing^{+++}

Pinana JL et al. Bone Marrow Transplantation 2025; https://doi.org/10.1038/s41409- 025-02549-7

PIV and hMPV : therapeutic algorithm

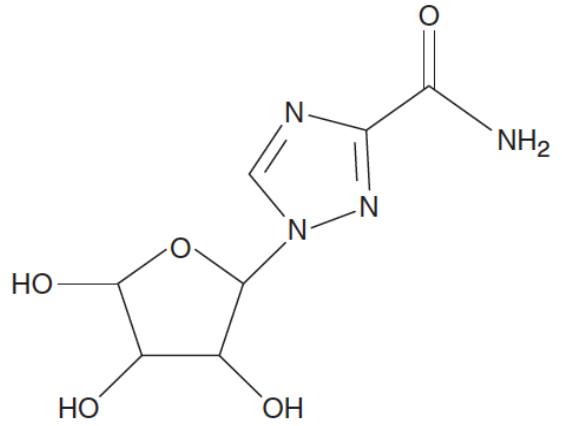


Liu JW, Lai CC, Hsueh PR. Lancet Infect Dis 2025 https://doi.org/10.1016/ S1473-3099(25)00240-3
ECIL10 Sept 2024 update of 2019 guidelines https://www.ecil-leukaemia.com/en/resources/resources-ecil
von Lilienfeld-Toal M et al. Lancet Infect Dis 2025. 2025 Aug 27:S1473-3099(25)00365-2. doi: 10.1016/S1473-3099(25)00365-2

For patients at high risk for progression to, or who have been diagnosed with, RSV-LRTID, adjunct treatment could be considered with at least **three doses of intravenous immunoglobulin** at **0·5 g/kg** bodyweight within 1–2 weeks of diagnosis	**BIII**
For patients testing positive for RSV and **hypogammaglobulinaemia (<4·5 g/L)**, treatment with at least **three doses of intravenous immunoglobulin** at **0·5 g/kg** bodyweight administered within 1–2 weeks of diagnosis could be considered	**BIII**
Use of corticosteroids at more than 1 mg/kg per day at diagnosis of RSV-LRTID has been associated with **disease progression and mortality**; thus, reducing corticosteroid administration to less than 1 mg/kg of bodyweight can be considered if feasible	**CIII**

von Lilienfeld-Toal M et al. Lancet Infect Dis 2025. 2025 Aug 27:S1473-3099(25)00365-2. doi: 10.1016/S1473-3099(25)00365-2

Ribavirin (RBV): 1972 !! Guanosine analogue



Bio-availibility **45-65%**

Ingestion with **fat meal** : bio-availibilty optimization **x 1.5**

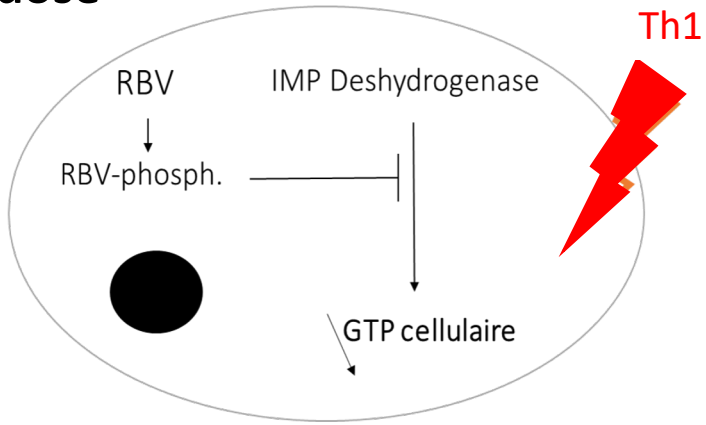
Important but slow **tissular diffusion index**, CNS included

Long half-life = **150h** (1 dose) up to **300h** (cumulative doses)---- > **loading dose**

Drug clearance dpdt on :

- **weight** (adaptation dose/weigth)
- **renal function**

No hepatic metabolization = no dose adaptation (end-stage liver diseases)



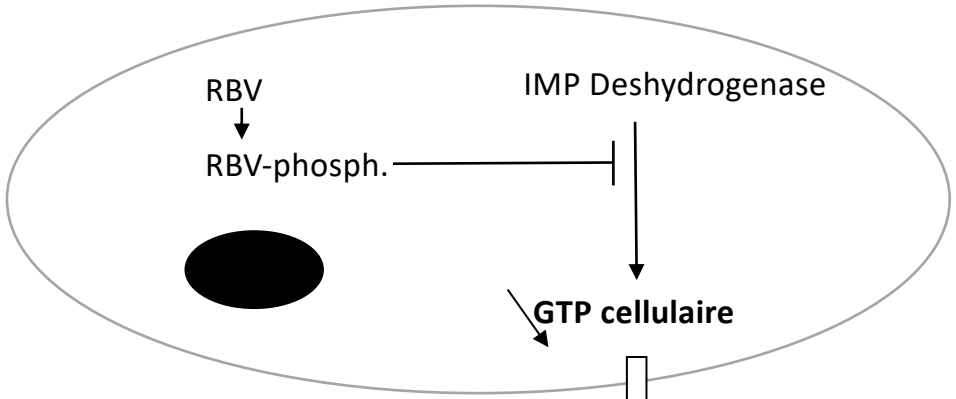
Naik GS & Tyagi MG. J Clin Exp Hepatol. 2012 doi: 10.1016/S0973-6883(12)60090-5

Use of systemic ribavirin for RTI/D with RSV, PIV, and MPV

Treatment course	Description
Oral or intravenous ribavirin maximal dosing at 10 mg/kg body weight every 8 h for adults	Day 1: start with 600 mg loading dose, then 200 mg every 8 h Day 2: 400 mg every 8 h Day 3: Increase the dose to a maximum of 10 mg/kg body weight every 8 h In case of adverse events, decrease dose or discontinue ribavirin
Oral or intravenous administration according renal function	Dose for a creatinine clearance of 30 to 50 ml/min: a maximum of 200 mg every 8 h For a creatinine clearance of 10 to 30 ml/min, no dose recommendation can be given[b]

[b]Some experts use 200 mg once daily under close clinical and laboratory monitoring

Ison MG, Hirsch HH. Clin Microbiol Rev 2019. doi: 10.1128/CMR.00042-19
ECIL10 Sept 2024 update of 2019 guidelines https://www.ecil-leukaemia.com/en/resources/resources-ecil

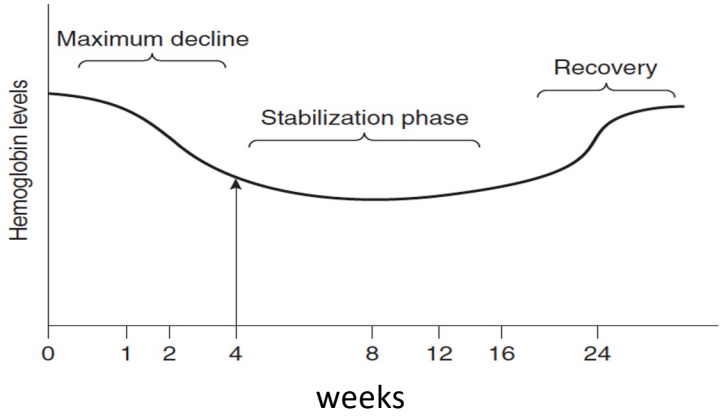


Anemia (11-35%)
Hemolytic anemia (10-13%)
Neutropenia (8-40%)
Lymphopenia (14%)
MOSTLY IF >14 days

Contre-indication pendant la grossesse

Anémie hémolytique dose-dpdte et réversible

Déplétion GTP et ATP
Acidose lactique



Chaer et al. Transpl Cell Ther, 2023
Riner A et al. Postgraduate Medicine 2009; 121:3, 5-15
Gross AE et al. Annals of Pharmacotherapy 2015; 49(10) 1125–1135

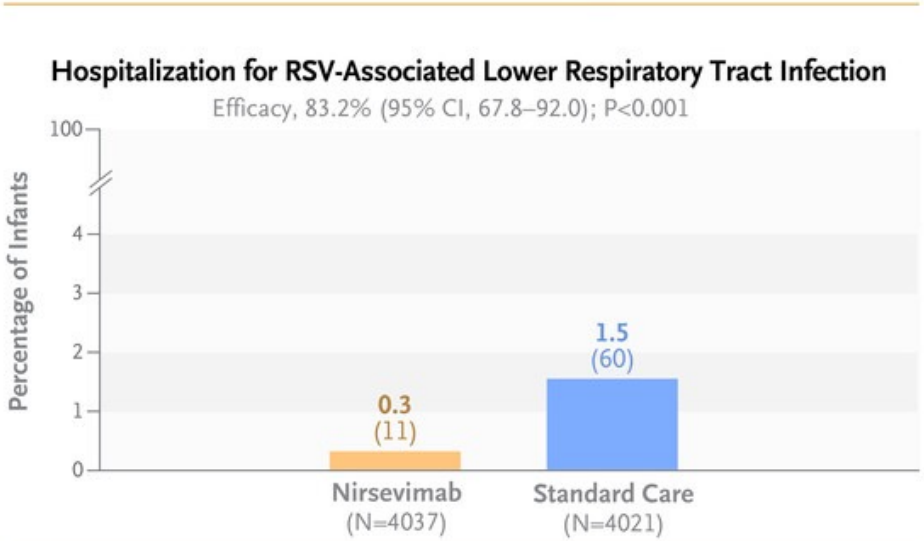
Prophylactic anti-RSV mAbs in high-risk adult transplant recipients ?

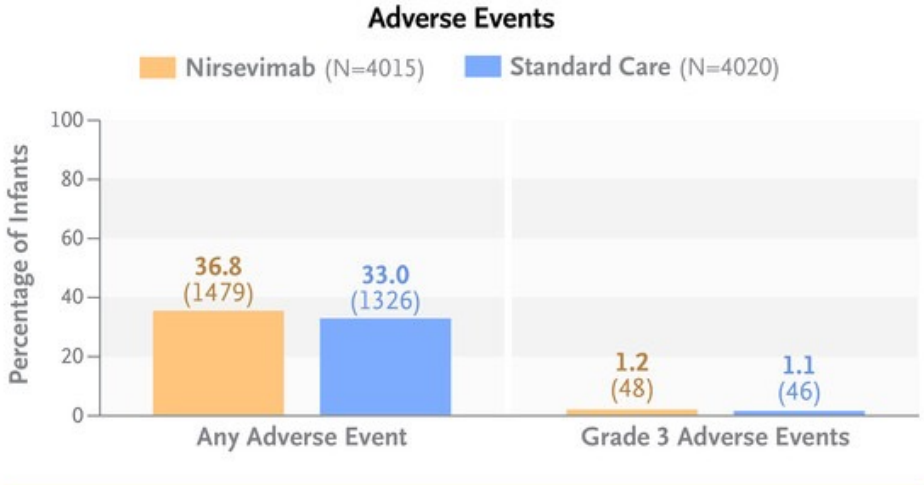
Randomized Controlled Trial > N Engl J Med. 2023 Dec 28;389(26):2425-2435.
doi: 10.1056/NEJMoa2309189.

Nirsevimab for Prevention of Hospitalizations Due to RSV in Infants

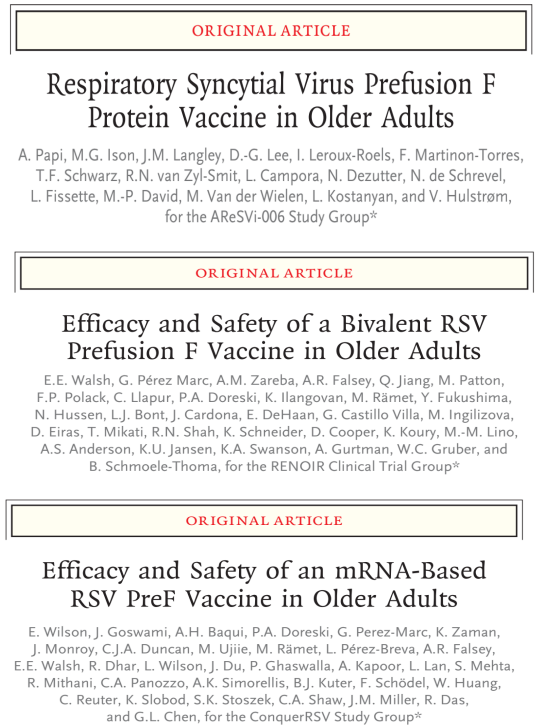
Simon B Drysdale [1], Katrina Cathie [1], Florence Flamein [1], Markus Knuf [1], Andrea M Collins [1], Helen C Hill [1], Friedrich Kaiser [1], Robert Cohen [1], Didier Pinquier [1], Christian T Felter [1], Natalya C Vassilouthis [1], Jing Jin [1], Mathieu Bangert [1], Karine Mari [1], Rapi Nteene [1], Sophie Wague [1], Michelle Roberts [1], Pierre Tissières [1], Simon Royal [1], Saul N Faust [1]; HARMONIE Study Group

Phase III, open label RCT
1:1 nirsevimab *vs* SoC





International phase III RCT *vs* placebo, ≥60y, **exclusion criteria = immunocompromised**



ORIGINAL ARTICLE

Respiratory Syncytial Virus Prefusion F Protein Vaccine in Older Adults

A. Papi, M.G. Ison, J.M. Langley, D.-G. Lee, I. Leroux-Roels, F. Martinon-Torres, T.F. Schwarz, R.N. van Zyl-Smit, L. Campora, N. Dezutter, N. de Schrevel, L. Fissette, M.-P. David, M. Van der Wielen, L. Kostanyan, and V. Hulstrøm, for the AReSVi-006 Study Group*

ORIGINAL ARTICLE

Efficacy and Safety of a Bivalent RSV Prefusion F Vaccine in Older Adults

E.E. Walsh, G. Pérez Marc, A.M. Zareba, A.R. Falsey, Q. Jiang, M. Patton, F.P. Polack, C. Llapur, P.A. Doreski, K. Ilangovan, M. Rämet, Y. Fukushima, N. Hussen, L.J. Bont, J. Cardona, E. DeHaan, G. Castillo Villa, M. Ingilizova, D. Eiras, T. Mikati, R.N. Shah, K. Schneider, D. Cooper, K. Koury, M.-M. Lino, A.S. Anderson, K.U. Jansen, K.A. Swanson, A. Gurtman, W.C. Gruber, and B. Schmoele-Thoma, for the RENOIR Clinical Trial Group*

ORIGINAL ARTICLE

Efficacy and Safety of an mRNA-Based RSV PreF Vaccine in Older Adults

E. Wilson, J. Goswami, A.H. Baqui, P.A. Doreski, G. Perez-Marc, K. Zaman, J. Monroy, C.J.A. Duncan, M. Ujiie, M. Rämet, L. Pérez-Breva, A.R. Falsey, E.E. Walsh, R. Dhar, L. Wilson, J. Du, P. Ghaswalla, A. Kapoor, L. Lan, S. Mehta, R. Mithani, C.A. Panozzo, A.K. Simorellis, B.J. Kuter, F. Schödel, W. Huang, C. Reuter, K. Slobod, S.K. Stoszek, C.A. Shaw, J.M. Miller, R. Das, and G.L. Chen, for the ConquerRSV Study Group*

		n LRTD VRS+	Vaccine efficacy
RSVPreF3 OA (adj.)	n = 24,966	47 (2S+ ou 3 S+)	82.6%
RSVpreF (biv.)	n = 34,284	44 (2S+)/16 (3S+)	66.7% (2S+)/85.7% (3S+)
mRNA-1345	n = 35,541	64 (2S+)/20 (3S+)	83.7% (2S+) / 82.4% (3S+)

Papi A, et al; AReSVi-006 Study Group. N Engl J Med. 2023 doi: 10.1056/NEJMoa2209604
Walsh EE, et al; RENOIR Clinical Trial Group. N Engl J Med. 2023 doi: 10.1056/NEJMoa2213836
Wilson E, et al; ConquerRSV Study Group. N Engl J Med. 2023 doi: 10.1056/NEJMoa2307079

RSV vaccines

Nom, Fabricant	RSVpreF3-AS01, GSK	RSVpreF, Pfizer Inc	mRNA-1345, Moderna
Type de vaccin	Protéique recombinant, avec **adjuvant** AS01E 1 dose	protéique recombinant, **bivalent** (A et B), sans adjuvant 1 dose	**ARNm**
AMM FDA	50-59 ans « à risque » ≥60 ans ✓	18-59 ans « à risque » ≥60 ans ✓	≥60 ans ✓
AMM EMA	50-59 ans « à risque » ≥60 ans ✓	≥18 ans ✓	≥60 ans ✓
Disponible en France	≥ 65 ans « à risque » ≥ 75 ans Femme enceinte 32-36 SA ✓	✓	✗
Remboursement	✗	✗	✗
Prix	libre ≈200€	196,10€	✗

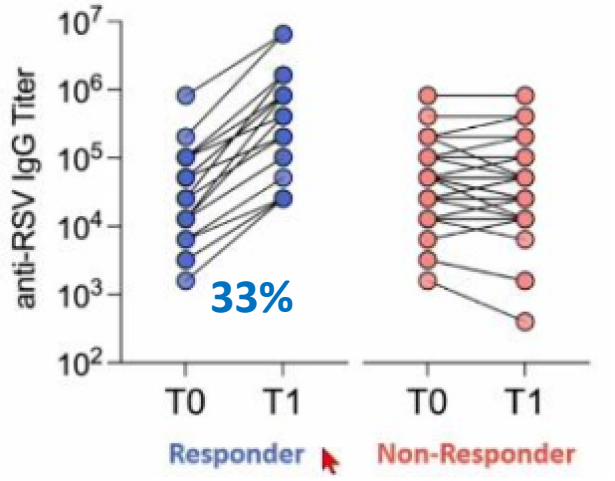
https://www.ema.europa.eu/en/documents/product-information/arexvy-epar-product-information_en.pdf
https://www.ema.europa.eu/en/documents/product-information/abrysvo-epar-product-information_en.pdf
https://www.ema.europa.eu/en/documents/product-information/mresvia-epar-product-information_en.pdf

J. Lötscher, ESCMID Global 2025

Prospective, single-center Bâle
n = 112 allo-HSCT > 3 months. Median age 62y
Status = 50% IS drug, 50% GvHD
Single dose RSVpré-F3 (Arexsvy®) 53% within 12 months

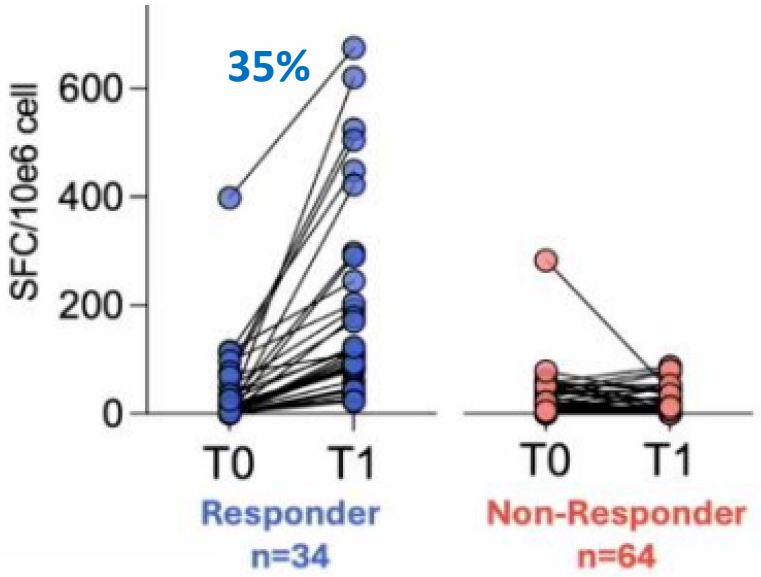
→ Risk factors for unresponsiveness:
- GvHD
- IS therapy
- Delayed immune cellular recovery

Humoral response
(x4 anti-RSV pre-F IgG titers)
n = 66



	Responder (n=22)	Non-Responder (n=44)
Median T0 (± IQR)	25'600 ± 38'800	25'600 ± 38'700
Median T1 (± IQR)	409'600 ± 1'024'000	25'600 ± 41'600
Median fold-change (± IQR)	**8.00 ± 8.00**	**1.00 ± 1.49**

Cellular response
(Anti-F ELISPOT)
n = 98



Prevention^{+++}/Education ---- > **what have we leaned from the COVID-19 pandemics (??)**

Allo-HSCT/lung Tx

Frequency : RhinoV
Severity : influenza/RSV
Co/super-infections

Proactive decision-making: risk factors + NAT + CT scan

Neuraminidase inhibitor/oseltamivir
Guanosine analogue/ribavirin

Influenza vaccine^{+++}
RSV vaccine ? ----- >RSVaxID
Prophylactic mAbs ?

PHRC N 2025
RSVaxID: immunogenicity and safety of two respiratory syncytial virus vaccine strategies in lung and allogeneic haematopoietic stem cell transplant recipients: a phase 2 trial
PI: Dr. Anne CONRAD