VACCINS ANTI-INFECTIEUX ET CANCER BRONCHO-PULMONAIRE

1. Généralités

Certaines chimiothérapies et la corticothérapie peuvent induire une déplétion lymphocytaire avec baisse du nombre et de la fonctionnalité des lymphocytes TCD4 et lymphocytes B associé à une baisse des IgM et IgA sans baisse significative des IgG (116). Les lymphocytes se normalisent rapidement, dans les 3 mois suivant l'arrêt de la chimiothérapie tandis que les Ig reviennent à la normale dans les 6 mois.

Cette déplétion lymphocytaire entraîne un risque accru d'infections et particulièrement d'infections sévères dont certaines peuvent être prévenues par des vaccins (pneumocoque et grippe notamment). Cependant, l'immunodépression entraîne également une baisse de l'immunogénicité et donc une diminution de l'efficacité vaccinale. Il est donc important dans la mesure du possible de vacciner les patients avant de débuter la chimiothérapie.

En revanche, **les vaccins vivants sont contre-indiqués** en cours de chimiothérapie ou d'immunothérapie et au moins 6 mois après la fin de la chimiothérapie ou de l'immunothérapie.

2. Vaccins inactivés

Les vaccinations spécifiques recommandées avant de débuter une chimiothérapie sont[N] [O] :

- Vaccination antigrippale (par vaccin inactivé) en période épidémique,
- Vaccination anti-pneumococcique.

Il convient de réaliser une sérologie de l'hépatite B (Ag HBs, Ac anti-HBs et antiHBc) afin de dépister les porteurs chroniques et les patients non immuns à risque de contamination pour lesquels la vaccination devra être réalisée dès que possible.

Pour les vaccins du calendrier vaccinal, une dose de rappel doit être administrée 3 à 6 mois après la chimiothérapie.

Concernant la vaccination chez des patients sous immunothérapie, une revue de la littérature sur la vaccination anti-grippale chez des patients traités par immunothérapie a confirmé son efficacité et l'absence de toxicité inhabituelle (117,118).

[N] Recommandation HCSP - dec 2014 -vaccination des personnes immunodéprimées ou asplénique

[O] Calendrier vaccinal 2019 disponible sur https://solidarites-sante.gouv.fr/IMG/pdf/calendrier_vaccinal_mars_2019.pdf (consulté le 12/11/2019).

Vaccins	Avant et pendant chimiothérapie	Post-chimiothérapie
Vaccin anti-COVID	Recommandé	Pas de rappel spécifique recommandé
Grippe saisonnière (vaccin inactivé)	Recommandé à l'automne et en période épidémique	1 injection annuelle à l'automne et en période épidémique
Pneumocoque	Si patient non vacciné au préalable : - 1 dose de vaccin conjugué 13-valent (Prevenar 13®) - Puis au moins 2 mois après : 1 dose de vaccin polyosidique non conjugué 23-valent (Pneumovax®)	3 mois après chimiothérapie, si patient à risque de récidive ou à risque d'infection à pneumocoque : - 1 dose de vaccin polyosidique 23-valent (Pneumovax®)[$]
Diphtérie Tétanos Poliomyélite Coqueluche	Pas d'indication	3 mois après chimiothérapie: - 1 injection de vaccin combiné DTP-coqueluche acellulaire
Hépatite B	Sérologie (Ag HBs, Ac anti-HBs et anti HBc) systématique Si patient non immun* et à risque d'infection[¤] : - Vaccination et contrôle titre Ac à 4 semaines	A 6 mois post-chimiothérapie : injection de rappel dans la population à risque[¤]

[$]Si vaccination préalable. Si pas de vaccination préalable : faire schéma à deux injections comme recommandé avant chimiothérapie
*Non immun = Ag HBs négatif, Ac anti-HBs et anti-HBc négatifs
[¤]Population à risque : détenu, partenaires sexuels multiples, usager de drogue, voyageur (ou résident) en zone de forte ou moyenne endémie, professions à risque d'exposition aux liquides biologiques, patient susceptible d'être transfusé à de multiples reprises.

Tableau 30 – Recommandations de vaccination par vaccins inactivés chez les patients recevant une chimiothérapie

3. Vaccin anti-COVID

Les patients atteints d'un cancer pulmonaire sont un groupe à risque de forme grave du COVID 19. La vaccination anti-COVID 19 est particulièrement recommandée dans cette population.
Une revue de la littérature sur la vaccination anti-COVID chez les patients atteints de cancer a montré que celle-ci était associée à un taux de séroconversion correct mais plus faible et retardé par rapport à la population générale. La tolérance des vaccins est la même que dans la population générale (119).
Une étude prospective monocentrique de 816 patients atteints d'un cancer et 274 sujets sains ayant été vaccinés par BNT162b2 (Pfizer-BioNTech) a montré un taux de séroconversion de 94,2% chez les patients ayant un cancer (vs 100%). Les facteurs prédictifs en analyse multivariée d'une moins bonne réponse vaccinale sont la chimiothérapie et la corticothérapie (120).
Une autre étude ayant inclus 189 patient avec un cancer et 99 volontaires sains a montré que la vaccination anti covid (par BNT162b2 (Pfizer-BioNTech) mRNA-1273 (Moderna Biotech) ou AZD1222 (Astra Zeneca)) a permis une séroconversion chez 90,5% des patients avec un cancer vs 98,0% du groupe contrôle (p=0.015). Les facteurs associés à l'absence de séroconversion sont le sexe masculin, l'age > 70 ans, les comorbidités et les traitement anti-cancéreux (121).

Recommandations

Chez les patients avec un cancer pulmonaire, y compris ceux recevant une chimiothérapie ou une immunothérapie, la vaccination anti-COVID est recommandée dès que possible (idéalement avant de débuter la chimiothérapie) (122,123).

Chez les 10% n'ayant pas de séronconversion post vaccinale, un traitement prophylactique par Ac monoclonaux peut-être nécéssaire.

4. Vaccins vivants

Les vaccins vivants sont contre-indiqués en cours de chimiothérapie ou d'immunothérapie et au moins 6 mois après la fin de la chimiothérapie ou de l'immunothérapie.

	VACCINATION	Prise en charge en cas de CONTAGE	Recommandations pour l'ENTOURAGE
BCG	Non recommandée, quel que soit le délai	Prise en charge d'une infection tuberculeuse latente	Selon les recommandations en population générale
Rougeole Oreillon Rubéole	Après un délai de 6 mois post-chimio chez les adultes nés après 1980 : Si vaccination complète préalable : 1 dose Sinon : 2 doses séparés d'au moins un mois	Contage rougeole : Ig polyvalentes IV ; à discuter en fonction du niveau d'immunosuppression.	Vaccination chez sujets n'ayant pas reçu un schéma vaccinal complet (si rash post-vaccinal : éviter contact)
Varicelle	Après un délai de 1 an post-chimio chez sujets non immuns à risque de rechute	Contage varicelle ou zona : Ig spécifiques ; à discuter en fonction du niveau d'immunosuppression.	Vaccination chez sujets non immuns (si rash post-vaccinal : éviter contact)
Fièvre jaune	Contre-indiquée pendant 6 mois post chimio		
Rotavirus	Non recommandée Contre-indiquée jusqu'à 6 mois post-chimio		Vaccination **contre-indiquée** pendant la CT et dans les 6 mois suivant
Grippe saisonnière par vaccin vivant atténué (Fluenz®)	Contre-indiquée jusqu'à 6 mois post-chimio		Vaccination contre-indiquée pendant 6 mois

Tableau 31 – Recommandations de vaccination par vaccins vivants chez les patients recevant une chimiothérapie et leur entourage et conduite à tenir en cas de contage

5. Calendrier vaccinal avant traitement anti cancéreux

Les données de la littérature ne sont pas concordantes sur le moment idéal pour vacciner les patients.
Les experts estiment qu'il est préférable de vacciner les patients au plus tôt avant la chimiothérapie, idéalement 10 jours avant le début de la chimiothérapie, voire le premier jour de celle-ci.
En cas de chimiothérapie pendant la période épidémique grippale, la vaccination anti-grippale est à faire entre deux chimiothérapies, en dehors de la période de nadir.

Recommandations

- Les vaccins spécifiquement recommandés sont :
- **Vaccination anti-CoviD**
- **Vaccination antigrippale inactivée annuelle en période épidémique**
- **Vaccination anti-pneumococcique.**

- Les vaccins recommandés doivent être effectués au plus tôt avant le traitement anticancéreux bien qu'il soit possible de vacciner jusqu'au 1er jour de la chimiothérapie.
- Les vaccins vivants sont contre-indiqués au cours de la chimiothérapie ou de l'immunothérapie et dans les 6 mois suivant l'arrêt.
-Un rappel des vaccins du calendrier vaccinal (DTP uniquement hors cas particulier) doit être fait 3 à 6 mois après l'arrêt de la chimiothérapie

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