VACCINES IN SOT

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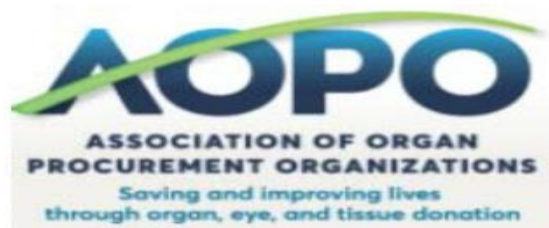
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Vaccines in SOT

- All transplant candidates should be up to date on their routine vaccines as per national guidelines (strong; low).

Vaccines in SOT

- Vaccine responses are generally reduced compared to healthy controls especially early posttransplant or rejection treatment, particularly if lymphocyte-depleting therapies or rituximab is utilized.
- In general, vaccination can be started any time after 1 month posttransplant; however, immunogenicity may be diminished with higher doses of immunosuppression

Vaccines in SOT

- Inactivated vaccines should be given at least 2 weeks prior to transplant where possible for an adequate immune response (strong; moderate).

Live-attenuated vaccines

- Live-attenuated vaccines should be given at least 4 weeks prior to transplant to ensure that vaccine-related viral replication has resolved prior to transplant (strong; low).

Live-attenuated vaccines

- Live vaccines should be avoided in the posttransplant period although published literature in pediatric patients suggests that select posttransplant patients could safely receive live varicella vaccine .
- Not enough data are available to recommend other live vaccines.
- A yellow fever vaccine waiver is generally required for SOT recipients traveling to yellow fever-endemic areas.

Live-attenuated vaccines

- Close contacts of transplant patients can receive the most necessary vaccines including live vaccines.
- Live vaccines contraindicated in close contacts are oral polio and smallpox vaccines due to the risk of transmission.
- For other live vaccines, the risk of transmission of attenuated pathogens is minimal.

Influenza vaccination

- In the post-transplant setting, inactivated vaccines can be administered starting at 3-6 months post-transplant (strong; moderate) except influenza vaccine which can be given as early as 1 month post-transplant (strong; low).

Influenza vaccination

- Influenza vaccination is recommended for all transplant candidates (strong, moderate) and recipients (strong, high). In the posttransplant setting, randomized trials show that either high-dose or booster dosing in the same season has greater immunogenicity over a single standard dose and may be preferred over standard dosing (strong, moderate).

Hepatitis B vaccine

- Hepatitis B vaccine series should be offered pre-transplant. Accelerated schedules such as 0,1,2 months or 0,7,21 days can be used. A higher dose (40 μg) vaccine can be used in end-stage renal disease (strong, low)

pneumococcal vaccines

- Both PCV13 and PPSV23 pneumococcal vaccines should be administered to transplant candidates and recipients (strong, moderate).
- In vaccine naïve patients, PCV13 can be administeredfirst followed by PPSV23 a minimum of 8 weeks later.
- PPSV23 booster can be given after 5 years.

meningococcal vaccine

- Routine quadrivalent meningococcal vaccine should be given to children as per local guidelines.
- In adults, meningococcal vaccination (ACYW) can be administered before or after transplantation in patients with risk factors (strong, moderate).
- Meningococcal B vaccination in at-risk adolescents and adults can also be considered (weak, very low).

meningococcal vaccine

- Use of the terminal complement inhibitor eculizumab is shown to predisposeto fatal meningococcal sepsis.
- Therefore, two doses of meningococcal quadrivalent vaccine should be given prior to initiating eculizumab.
- . Meningococcal disease has occurred despite vaccination, and therefore for additional protection, antibiotic prophylaxis is recommended.
- Agents for chemoprophylaxis include amoxicillin or ciprofloxacin given for the duration of eculizumab and continuing for 3 months after the last dose of eculizumab.

HPV vaccination

- HPV vaccination can be administered before or after transplantation to at-risk patients meeting specific age criteria (strong, low).

zoster vaccination

- Transplant candidates ≥50 years of age should receive herpes zoster vaccination (strong,high).
- Subunit vaccination is preferred over live-attenuated vaccine to avoid delays in transplant.
- Post-transplant patients ≥50 years can also receive subunit vaccine (weak, moderate). Transplant candidates and recipients <50 years of age could be considered for herpes zoster vaccine (weak, low).
- The long-term benefit of this strategy is unknown as is the vaccine effectiveness in VZV IgG negative patients or younger patients that have previously received varicella vaccine.

MMR and varicella

- MMR and varicella vaccination are generally contraindicated post-transplant but may be administered in carefully selected patients with appropriate education and close follow-up (weak, low).

MMR and varicella

- It is preferred that household and close contacts be vaccinated against measles, mumps, rubella, and varicella to prevent the transplanted patient from having exposure to wild-type viruses (strong; very low).

COVID-19 Vaccine

- For pre-transplant patients, we recommend vaccination completion at least 2 weeks prior to transplantation if possible. For post-transplant patients, we recommend administering vaccination beginning as early as 1-3 months after transplantation. This can be individualized based on immunosuppression.
- • We do not recommend routinely checking antibody responses to the vaccine.
- We do not recommend routine adjustment of immunosuppressive medications prior to vaccination outside of clinical trials.

Inactivated vaccine	Risk/condition	Dosing schedule
TdaP (tetanus, diphtheria, acellular pertussis)	All	One dose—if not received in the last 10 years
Pneumococcal vaccines:Prevnar13 (PCV13)Pneumovax (PPV23)	All	*Persons who have never had pneumococcal vaccine*: Give one dose of Prevnar13 and Pneumovax at least 8 weeks later *Persons who have previously had Pneumovax*: Wait a minimum of 1 year from the last Pneumovax and give Prevnar13. Then give one dose of Pneumovax 5 years from previous dose and a minimum of 8 weeks from Prevnar13 dose. No further Pneumovax boosters are recommended
Hepatitis B	All (if anti-HBs negative)	Check anti-HBs, and if negative, start three-dose series 0, 1, 6 months Use high-dose hepatitis B vaccine (40 μg Recombivax)
Influenza	All	Annually—use injectable vaccine High-dose vaccines or two standard doses 5 weeks apart may have greater immunogenicity

HPV	Men ≤26 years and MSM of any age,Women ≤45 years of age	Three doses at 0, 2, 6 months
HiB (*Hemophilus influenzae*)	Asplenia or hyposplenia;lung transplantation	One dose
Hepatitis A	All	Two doses at 0, 6 months
Shingles (inactivated)	Age ≥50 years and VZV IgG positive	Two doses at 0, 2–6 months
Meningococcal A, C, Y, W-135	Asplenia or hyposplenia, travel to meningitis-endemic area,complement deficiencyEculizumab use	Two doses of quadrivalent vaccine 8 weeks apart (Menactra or Menveo)
Meningococcal B	Eculizumab use	Two doses of vaccine 8 weeks apart
Rabies	Extensive ongoing close contact with animals	Three doses intramuscular at 1, 7, 21–28 days

Inactivated vaccine	Risk/condition	Dosing schedule
Typhoid (*Salmonella typhi*)	Travel to areas of typhoid transmission	One dose Use inactivated parenteral vaccine
Dukoral	For prevention of traveler's diarrhea	Two oral doses 6 weeks apart Available in some countries only
Live vaccine		
Varicella	VZV IgG negative	Two doses 6 weeks apart Select posttransplant patients on minimal immunosuppression, normal lymphocyte count, close follow-up
MMR	Contraindicated	
Shingles (live-attenuated)	Contraindicated	
Yellow fever	Contraindicated	Small series post-SOT suggests it is safe although data are limited


Thank
You!