

GUIDELINES FOR PREVENTION OF TRANSMISSION OF INFECTIOUS DISEASES FROM ORGAN DONORS TO RECIPIENTS.

OBLIGATORY SCREENING OF THE DONOR:

The following tests should be run before organs are offered. The decision to accept or reject an organ from a donor with a positive test must be taken by the responsible surgeon.

Test	Interpretation of positive reaction	Comment 1	Comment 2
HBsAg	The liver can be given to HBsAg-positive recipients who are HDV-negative. The liver can be given to other recipients in urgent cases. Non-liver organs can be given to all recipients in urgent cases.	The recipient must be given entecavir or tenofovir from the time of transplantation. The recipient must be given entecavir or tenofovir from the time of transplantation. Recipients without HBV markers should receive perioperative HBIG and six months of entecavir or tenofovir treatment	HBIG prophylaxis has no value. HBIG prophylaxis has no value. Prophylactic treatment depends on HBV DNA level in donor.
Anti-HBc	The liver can be given to all recipients who are HDV-negative. Non-liver organs can be given to all recipients.	The recipient must be given entecavir or tenofovir from the time of transplantation. HBIG prophylaxis has no value except when the recipient is HBsAg positive If the donor is anti-HBs negative, recipients without HBV markers should receive a single dose of HBIG prior to revascularization and short-term lamivudine treatment may be considered	
Anti-HBs	If anti-HBc test is also positive: see above. If anti-HBc test is negative all organs can be used.	No prophylactic treatment is indicated.	Anti-HBs reactivity is most probably due to previous immunization of the donor.
Anti-HCV	All organs can be used	Antiviral treatment against HCV should be initiated soon after transplantation.	Priority should be given to recipients who are HCV RNA-positive.
Anti-CMV IgG	Organs are accepted		
Anti-HIV	Organs cannot be used, with the exception of urgent organ need in HIV-positive recipients.		

It is recommended that recipients give an informed consent to the use of organs from donors with signs of viral hepatitis.

Samples taken before donation, but analysed later

Test	Interpretation of positive reaction	Comment
Anti-EBV IgG	Increased risk for EBV complications in D+/R-.	Particularly important for paediatric recipients.
Syphilis antibody	Indication for treatment and/or special follow-up.	
Toxoplasma IgG	Toxoplasma prophylaxis should be considered for heart/lung recipients, particularly in IgG negative recipients	Trimethoprim-sulfamethoxazole is effective against Toxoplasma
IGRA test	Usually positive in latent TBC	Only in donor with risk for latent TBC

ACTIVE INFECTIONS IN DONOR:

- Septicaemia/Candidemia: Individual assessment – organs may be accepted if the causing agent and its antibiotic/antifungal resistance is known, and adequate antimicrobial treatment has been given. The necessary length of treatment of the donor, and post-tx of the recipient, will in each case depend on the causative agent and the clinical conditions.
- Multiresistant bacteria (MDR): Individual assessment – organs may be accepted if antibiotic resistance is known, and adequate antimicrobial treatment has been given.

If only colonization with MRSA, VRE and multiresistant gram-negative bacteria transplantation can be performed if colonized site is sealed off from donor organ. If lungs are colonized with MDR bacteria lungs should not be used. If urine is colonized with MDR bacteria kidneys should not be used.

- Multi-system organ failure due to overwhelming sepsis, gangrenous bowel Not accepted
- Active tuberculosis Normally not accepted but can be considered in urgent cases
- Disseminated mold fungal infection Not accepted
- Active disseminated viral infection do to i.e.:
herpes viruses (HSV, CMV, VZV, EBV), measles Not accepted
- Unknown CNS infection, or non-treatable encephalitis Not accepted

RESPONSIBILITIES:

The transplantation coordinator

- is responsible for that adequate tests being requested and performed according to the protocol, and that the results are forwarded to the surgeon in charge of grafting.

The surgeon in charge of grafting

- is responsible for the acceptance and the use of the organ, and thus for knowing the results of the performed tests.
- is responsible for judging if a test could be postponed until after grafting or a mismatch could be accepted for the specific recipient.

STORING OF SERUM: Adequate material (sera) for testing and storage in the recipient centre must accompany each organ. Recipient centres should store donor and recipient (pre-transplant) serum (10 years).

ADDENDUM

Other infections pose risks for complications after transplantation and may be of relevance in certain situations.

This issue has become more relevant in the last decade due to immigration from and travels to regions where certain infections are endemic.

Hemorrhagic fever	Travelers or residents returning from an area with ongoing outbreak should be deferred from donation of any organ for two months after return.
HTLV-I/II	Anti-HTLV-I/II testing of donors from geographic areas with higher prevalence of HTLV-I/II infections (e.g. Japan, South America) may be considered. If positive, organs are not accepted.
West Nile virus	Donors living or coming from regions with ongoing outbreak should be tested with PCR to rule out viremia. Organs from asymptomatic donors might be used before the results of the test is available. Organs from donors with sign of acute infection should not be used.
Q fever (<i>Coxiella burnetii</i>)	The risk is too low to justify testing. Exclusion of donors may rarely be considered on the basis of possible recent exposure and clinical picture.
Lymphocytic choriomeningitis virus	The risk is too low to justify testing.
Malaria	If there are signs of recent malaria, the organ may be accepted only if adequate testing has been performed and anti-malaria treatment has been given. Consider prophylactic treatment of recipient. Non-symptomatic donors originating from endemic areas can be accepted but it is recommended to test the donors for malaria (PCR).
<i>Strongyloides stercoralis</i>	Donors originating from or frequently visiting tropics and subtropics should be screened for latent <i>Strongyloides</i> infection using anti- <i>Strongyloides</i> -IgG (ELISA). Results will not be available before transplantation but if IgG is positive the recipient should receive Ivermectin or Albendazol to prevent hyperinfection due to <i>S. stercoralis</i> .
Leishmania	It is recommended to test donors coming from endemic areas with serology or antigen test. Organs from asymptomatic donors might be used before the result of the test is available. Known untreated infection is a

contraindication for organ donation.

Chaga's disease (trypanosoma cruzi)

For donors who have lived in endemic areas in South and Central America for more than 3 years, the possibility of Chagas disease should be considered and the donor should be tested (analysed post-transplant) with ELISA and if positive the recipient should be treated. Heart and intestinal organs should not be accepted from donors with a history of Chagas disease

Zika virus

Donor with recent travel history to Latin America or other affected areas without any symptom of viral infection - the risk for Zika infection is low and this low risk should balance the harm by declining the organs.

These recommendations were proposed by the Scandiarttransplant working group on November 2018. It is a revision of previous recommendations from 2016.

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Addendum 26th March 2020:

A deceased donor with COVID-19 infection should not be accepted as a donor for any organs. There are reports of coronavirus RNA being isolated in stool and blood in some cases and therefore there is a theoretical risk of transmission of coronavirus through all organs.

Therefore, all intended donors should be tested for SARS-CoV-2 as soon as possible and if positive, organs should not be accepted.

Addendum 9th March 2021:

A case of confirmed transmission of SARS-cov-2 from deceased lung donor to recipient has now been reported (doi: 10.1111/AJT.16532) In view of this, if donor lungs are procured in areas with high rates of SARS-CoV-2 transmission, it is recommended that donor samples be taken not only from the nose and throat, but also from the lower respiratory tract, acquired by bronchial wash using bronchoscopy or by unguided tracheal suction.