Table 1. Summary of vectors, pathogens, organs involved and diseases in some common vector-borne protozoan illnesses of potential neurological interest.

Vector	Pathogen	Human organs involved	Disease
Tse tse fly	*Trypanosoma brucei gambiense, T. brucei rhodesiense*	Brain, peripheral nerves, heart, liver, spleen, kidneys, skin, eyes	Human African Trypanosomiasis
Bugs: *Triatoma, Rhodnius*	*Trypanosoma cruzi*	Heart, oesophagus, colon	Chagas disease
Sand fly: *Phlebotomus, Lutzomyia*	*Leishmania*	Skin, spleen, liver, bone marrow, lymph nodes	Leishmaniasis
Ticks: *Ixodes*	*Babesia*	Blood, bone marrow, spleen, liver	Babesosis
Mosquito: *Anopheles*	*Plasmodium falciparum, P.vivax*	RBC, spleen, liver, brain	Malaria

Table 2. Treatment options in various vector-borne protozoan diseases

Cerebral malaria
Anti-infective treatment: Adults and children> 20 kg weight with severe malaria: Intravenous or intramuscular artesunate, 2.4 mg/kg/dose for 24 hours or till oral treatment is feasible. Thereafter oral treatment with any available artesunate-based combination treatment should be continued for three days. Pregnant women and lactating mothers: as above Individuals with clinical renal or hepatic impairment: as above Children < 20 kg weight: Intravenous or intramuscular artesunate, 3.0 mg/kg/dose for 24 hours or till oral treatment is feasible. When parenteral artesunate is not available: Intramuscular artemether, 3.2 mg/kg/dose in the first 24 hours, followed by 1.6 mg/kg/day for 3 days OR Intravenous quinine, 20 mg salt/kg, diluted in 5% dextrose and administered slowly over 4 hours, followed by 10 mg salt/kg, Q8 hours
Management of complications: Coma: Airway protection and intubation; nasogastric tube insertion and toilet; Rule out hypoglycaemia; Nurse on sides; Keep in intensive care Convulsive seizures or status epilepticus: Airway protection and intubation; Intravenous benzodiazepenes (resort to rectal use may be considered in children) in standard dose used to treat status epilepticus followed the standard protocol-based treatment of status epilepticus. Hypoglycemia: Frequently monitor blood glucose; maintain Dextrose infusions Coagulopathy: Fresh frozen plasma, Cryoprecipitate, Platelet transfusion; Parenteral Vitamin K Anaemia: Fresh whole blood transfusion
Human African Trypanosomiasis
Stage 1: CSF WBC ≤ 5/µL *T. b. gambiense*: Oral Fexinidazole 1200 mg (children*) or 1800 mg (adults*) loading for 4 days followed by 600 (children) or 1200 mg/day (adults) for 6 days OR IM Pentamidine 4 mg/kg intramuscular for 7 days** *T. b. rhodesiense*: IV Suramin, 5 mg/kg by slow intravenous infusion on day 1, 10 mg/kg on day 3, and then 20 mg/kg on days 5, 11, 17, 23, and 30, to a maximum cumulative dose of 10 g. Stage 2: *T. b. gambiense*: Cerebrospinal fluid WBC count < 100/µL Oral Fexinidazole 1200 mg (children*) or 1800 mg (adults*) loading for 4 days followed by 600 (children) or 1200 mg/day (adults) for 6 days OR NECT (nifurtimox-eflornithine combination therapy) as first line treatment***: Nifurtimox 5 mg/kg/8h PO for 10 days;

Eflornithine 200mg/kg/12h IV in 2-h infusion (each diluted in 250 mL of water) for 7 days

XX serious omission!!!

T. b. rhodesiense:
IV Melarsoprol 2.2mg/kg per day for 10 days as first line treatment

Commented [PN1]: Cerebrospinal fluid WBC count > 100/uL (severe second stage)

NECT (nifurtimox-eflornithine combination therapy) as first line treatment

IV Melarsoprol 2.2mg/kg per day for 10 days (slow injection) as second line

Commented [GS2R1]: Sorry Alfred, I am not clear, whether the above is to be included in the table or not? Please advise.

Commented [PN3]: It is important to include the above for severe stage 2 gambiense disease!