### **Green Book Cholera - FRCPath Part 2 – Revision Notes**

**Topic : Cholera & Cholera Vaccines (*Green Book* Ch 14, Aug 2024)**

#### **1 | Organism & Pathogenesis**

* *Vibrio cholerae* serogroups **O1 (El Tor & classical) and O139** cause epidemic disease; other serogroups rarely produce toxin .
* **Cholera toxin** → ↑cAMP → chloride secretion into intestine → massive isotonic fluid loss (“rice‑water” stools).
* Incubation a few hours–5 days (median ≈ 2–3 d) .

#### **2 | Clinical Spectrum**

|  |  |  |
| --- | --- | --- |
| **Severity** | **Typical presentation** | **Key risks** |
| Mild / inapparent (≈ 80–90 %) | Self‑limited diarrhoea or asymptomatic carriage | None |
| Severe (10–20 %) | Profuse watery diarrhoea, vomiting, rapid dehydration → shock | Death within hours without IV/ORS |

#### **3 | Epidemiology & Risk**

* **Seventh pandemic (El Tor)** ongoing since 1961; WHO noted global up‑surge mid‑2021 .
* 2022 WHO: ≥ 472 700 reported cases / 2 349 deaths; true burden 1.3–4 million cases & 21 000–143 000 deaths .
* UK: last home‑grown case 1893; mean 15 imported cases/yr 2015‑19, 20 in 2022 .
* Travellers’ absolute risk in endemic areas ~2–3 per million .

#### **4 | Transmission & Prevention Essentials**

Faeco‑oral via contaminated water/food; raw seafood notable.

Risk ↑ with achlorhydria, pregnancy, malnutrition, blood group O.

**WASH** measures (Water, Sanitation, Hygiene) remain cornerstone; vaccine is an adjunct .

#### **5 | Public‑Health Actions (UK)**

* **Notifiable disease** – phone local Health Protection Team immediately on suspicion .
* Manage cases with rehydration ± antibiotics; vaccines **not used** for ring vaccination or outbreak control in UK .

#### **6 | Vaccines Licensed in the UK (Table 14.1 abridged)**

|  |  |  |
| --- | --- | --- |
| **Attribute** | **Dukoral® (WC‑rCTB, killed)** | **Vaxchora® (CVD 103‑HgR, live)** |
|  | **Recombinant cholera B toxin** |  |
| Age range | ≥ 2 y | ≥ 2 y |
| Primary course | ≥ 6 y: 2 doses ≥ 1 wk apart;  2‑<6 y: 3 doses ≥ 1 wk apart | Single dose |
| Complete **≥ before travel** | 1 wk | 10 d |
| Booster | 1 dose ≤ 2 y (≥ 6 y) or ≤ 6 m (2‑<6 y); repeat full course if >2 y / 6 m elapsed | None established |
| Efficacy | 85 % at 6 m (Bangladesh); wanes to 26 % in 2–5 y by 36 m | 90 % at 10 d, 80 % at 3 m (challenge study) |
| Shedding | None | 11 % shed → hand‑wash × 14 d |
| Special notes | Some cross‑protection vs ETEC LT but **not recommended** for travellers’ diarrhoea  Can consider in breastfeeding due to killed | Live – avoid in immunosuppressed;  antibiotic avoid 14d pre and 10d post  chloroquine avoid 10d post |

#### **7 | Indications**

1. **Travellers** at high risk (aid workers, outbreak areas lacking safe water/healthcare, underlying comorbidity) .
2. **Occupational** – laboratory staff routinely handling *V. cholerae* .
3. Not required for international certificates since 1973 .

*Vaccines* ***not recommended*** *in children <2 y – no efficacy data* .

#### **12 | Management of Cases & Contacts (Exam Focus)**

* Vaccine **no role** for contacts/outbreak control in UK – rely on hygiene & source investigation .
* Contacts should practise scrupulous hand hygiene.

#### **13 | High‑Yield Viva Pearls**

1. **“O‑one only”** – both vaccines protect against O1, **not O139 or other *Vibrio*** .
2. Live Vaxchora shedding → counsel on handwashing & immunosuppressed contacts.
3. Restart Dukoral if > 6 wks between doses; booster intervals differ by age .
4. Oral cholera vaccination **not accepted** for International Health Regulations certificates .
5. Cross‑protection vs ETEC LT exists but vaccine **not** advocated for travellers’ diarrhoea prophylaxis .

#### **14 | Mnemonic – “CHO‑VAX SAFE”**

**C** holera toxin B vs live strain

**H** and hygiene still critical

**O** 1 only, not O139

**V** olume halve buffer (2‑<6 y)

**A** void antibiotics / chloroquine near Vaxchora

**X** tra sodium caution

**S** chedules: 2‑3‑1 doses, restart >6 wks

**A** id workers & lab staff – main indications

**F** ridge 2–8 °C, Dukoral 14 d @ ≤25 °C

**E** licit boosters: ≤ 2 y or ≤ 6 m