Tuberculosis

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Las Vegas, NV

- 1/3 of world's population is infected w/ M. tuberculosis
- ~2-3 million new cases/yr
- ~1.5 million die each year of TB

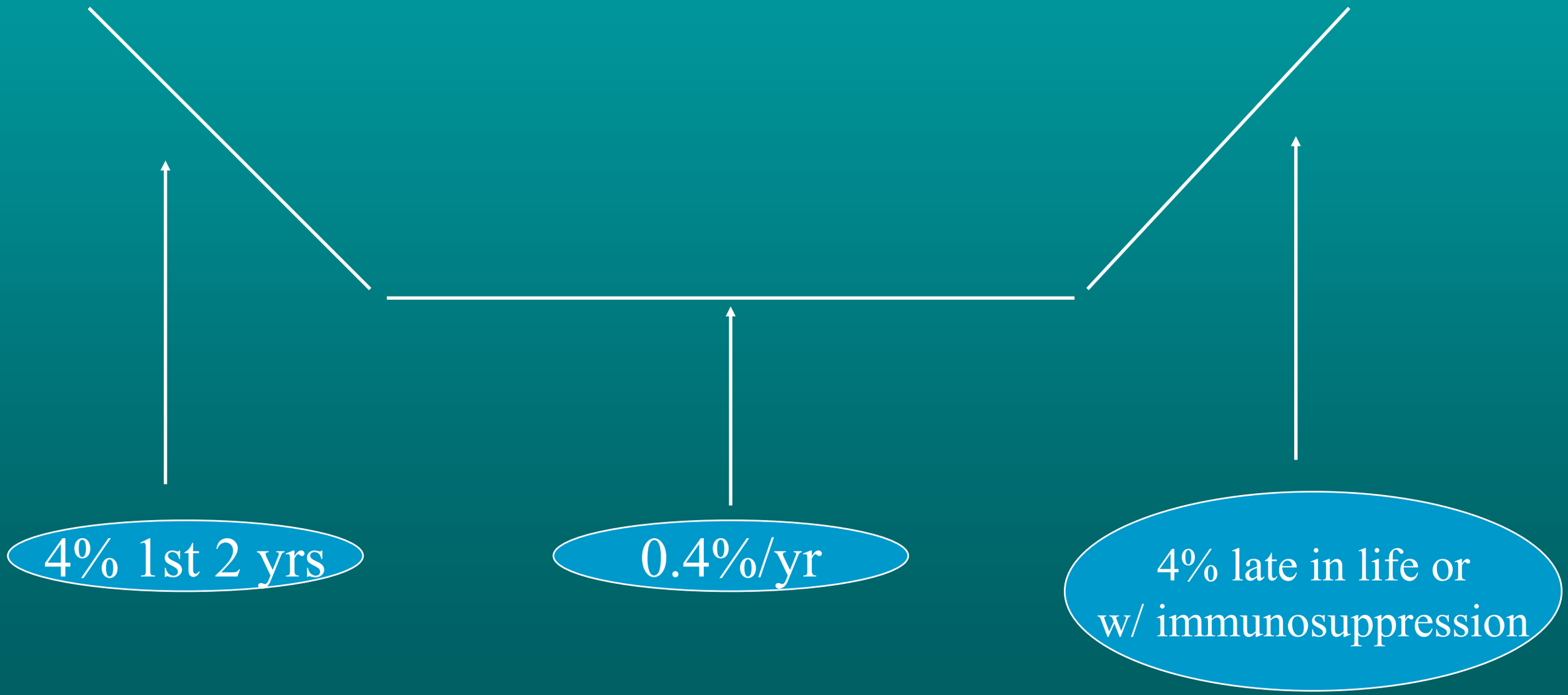
Risk Factors

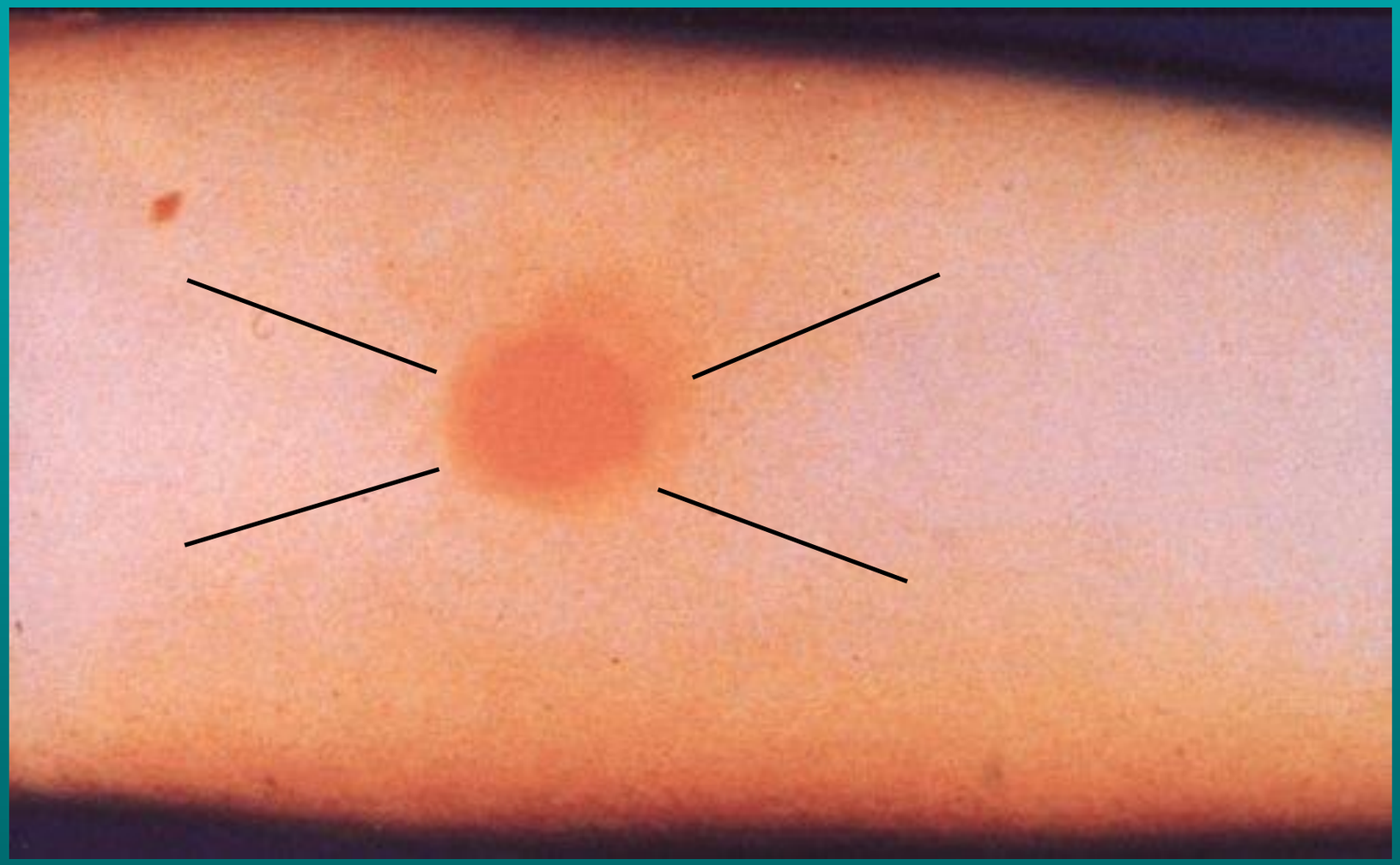
- HIV
- Systemic illness - e.g. diabetes, CKD
- poor nutritional status
- other immunocompromising states, including TNF-α blockers

Joseph in Haiti in 2003 shortly after his diagnosis of AIDS and tuberculosis.

- MDR TB: resistance that includes at least INH AND Rifampin
- XDR TB: resistance as above AND to at least one quinolone AND one of three injectable second-line drugs (amikacin, kanamycin, capreomycin)

Risk of developing active TB following new, asymptomatic infection (10% lifetime if not HIV +, etc): (w/o prophylaxis)





Interpretation of a + PPD:

- 5 mm considered positive in:
  - HIV+ patients
  - Recent contacts of Tb+ patients
  - Patients with CXR changes c/w prior Tb
  - Immunocompromised patients (organ transplants, patients receiving 15mg/day prednisone, etc.)
- 10 mm considered positive in:
  - Recent immigrants from other countries
  - Injection drug users with HIV (or unknown status)
  - Health care employees
  - Mycobacteriology lab personnel
  - Cancer patients
  - Children younger than 4 y.o.
- 15 mm considered positive in:
  - The community at large

Alternative tests for latent tuberculosis:

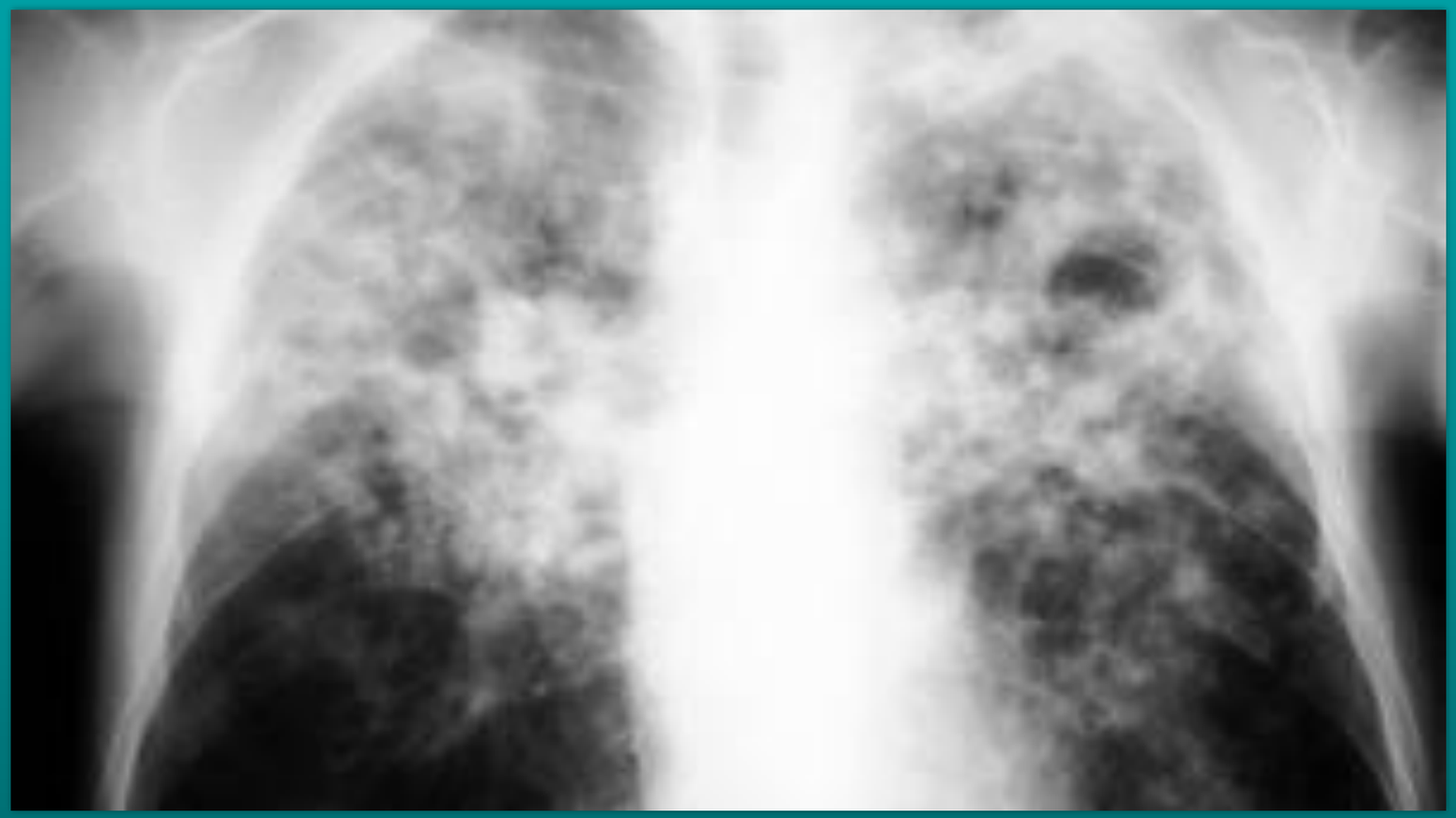
- Interferon-gamma release assays (IGRAs)
  - Quantiferon Gold
  - T-spot
- Interchangeable w/ TSTs, though not affected by prior BCG

Likelihood of developing active TB:

- 10% lifetime if otherwise reasonably healthy
- 10%/year if untreated HIV

Contagiousness:

- Cough w/ productive sputum
- “smear +” sputum
- cavitary lung disease
- Most contagious?? - laryngeal TB



Rx of Latent Tuberculosis:
(By definition, NO evidence of active dx)

Drug(s)	Duration	Dose	Frequency	Total Doses
Isoniazid (INH)	9 months	Adult: 5 mg/kg Children: 10-20 mg/kg Maximum dose: 300 mg	Daily	270
		Adult:15 mg/kg Children: 20-40 mg/kg Maximum dose: 900 mg	Twice weekly	76
	6 months	Adult: 5 mg/kg Children: Not recommended Maximum dose: 300 mg	Daily	180
		Adult: 15 mg/kg Children: Not recommended Maximum dose: 900 mg	Twice weekly	52
Isoniazid (INH) and Rifapentine (RPT)	3 months	Adults and Children 12 and over: **INH:** 15 mg/kg rounded up to the nearest 50 or 100 mg; 900 mg maximum **RPT:** 10.0–14.0 kg 300 mg 14.1–25.0 kg 450 mg 25.1–32.0 kg 600 mg 32.1–49.9 kg 750 mg *≥50.0 kg 900 mg maximum*	Once weekly	12
Rifampin (RIF)	4 months	Adult: 10 mg/kg Maximum dose: 600 mg	Daily	120

Usual (not MDR or XDR TB) tx of active (suspected or proven) TB

- Standard treatment involves a two month “intensive” treatment phase followed by a four month “continuation” phase
- Phase 1 should include dose appropriate:
  - Isoniazid, rifampin, pyrazinamide, and ethambutol
    - Dosed daily or DOT
- Phase 2 should include a continuation of:
  - Isoniazid and rifampin alone
    - Dosed daily or DOT

“The Rules”

- NEVER, EVER treat the possibility of active TB w/ just one drug
- If not sure, either Rx as active TB or do not Rx at all
- NEVER, EVER add just one drug to a failing regimen

Joseph in Haiti in 2003 shortly after his diagnosis of AIDS and tuberculosis.

Joseph, after six months of therapy.