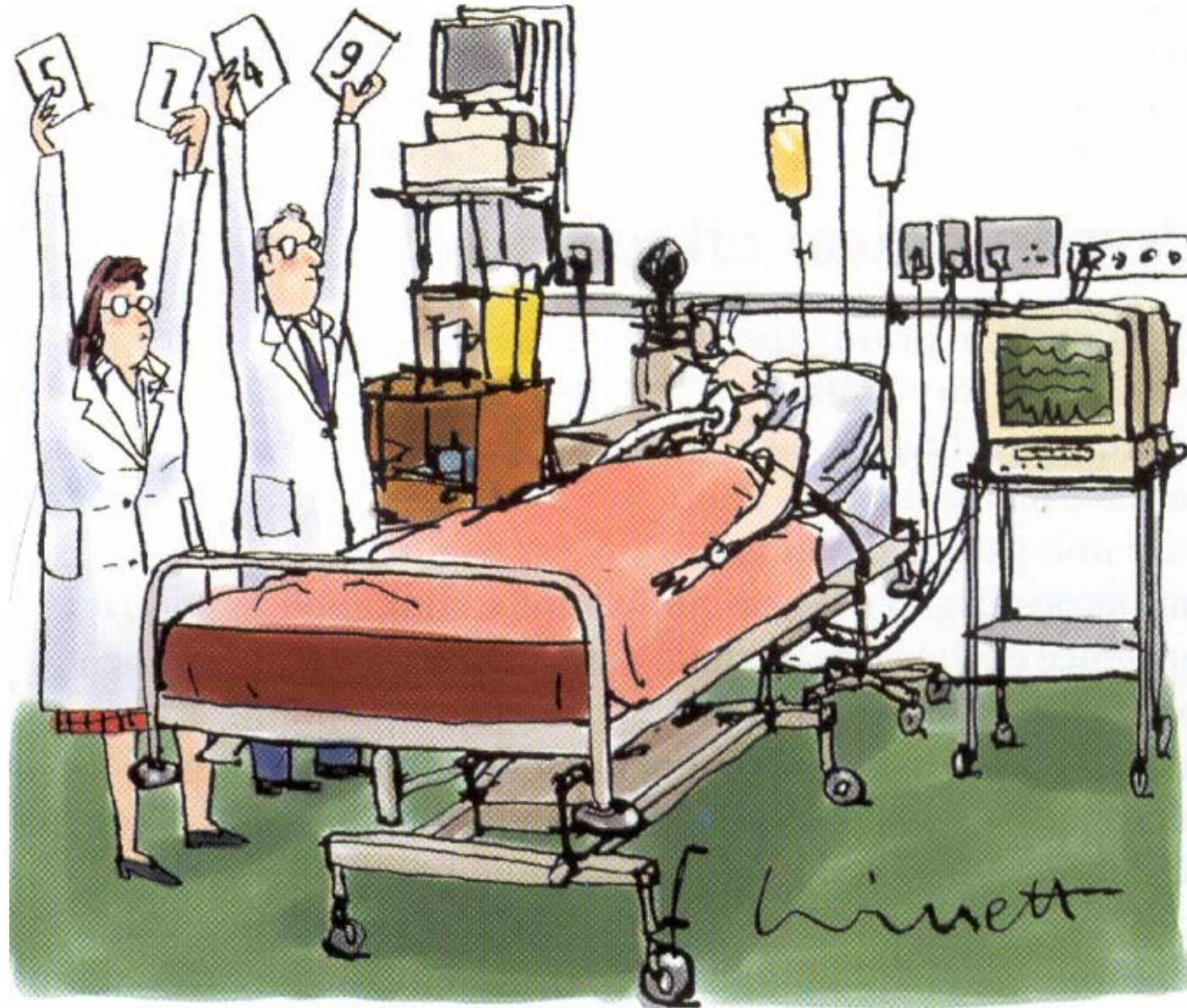




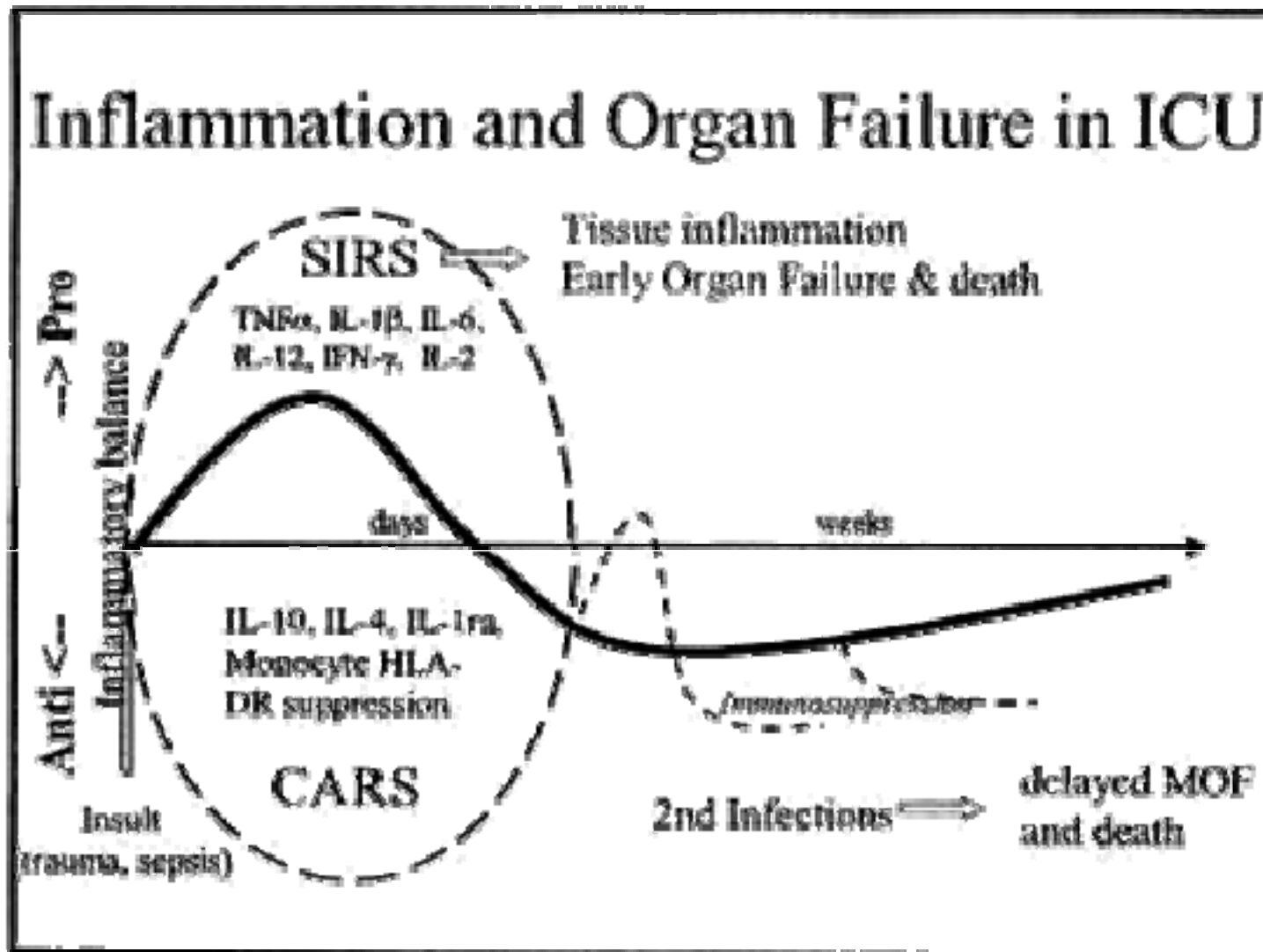
Surveillance cultures PRO

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Difficult to Diagnose Systemic Candidal Infection



Immunsuppression in critically ill patients



Frequent manifestation of fungus in ICU

Fungi were isolated in 15.9% patients admitted to ICUs.

Fungi were the causative agents of infection in 7.7% of cases.

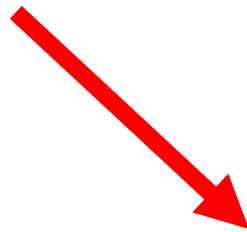
Candida albicans predominated in all sites.

The common risk factors for patients developing fungal infection.

- **Colonization**
- Broad-spectrum antibiotics
- Indwelling central catheter
- Total parenteral nutrition
- Immunosuppression
- Burns
- General measure of severity of illness.

Colonization of Candida species is an important issue

Candida species grown from 2 or more sites



30-50% risk of progression to candidemia

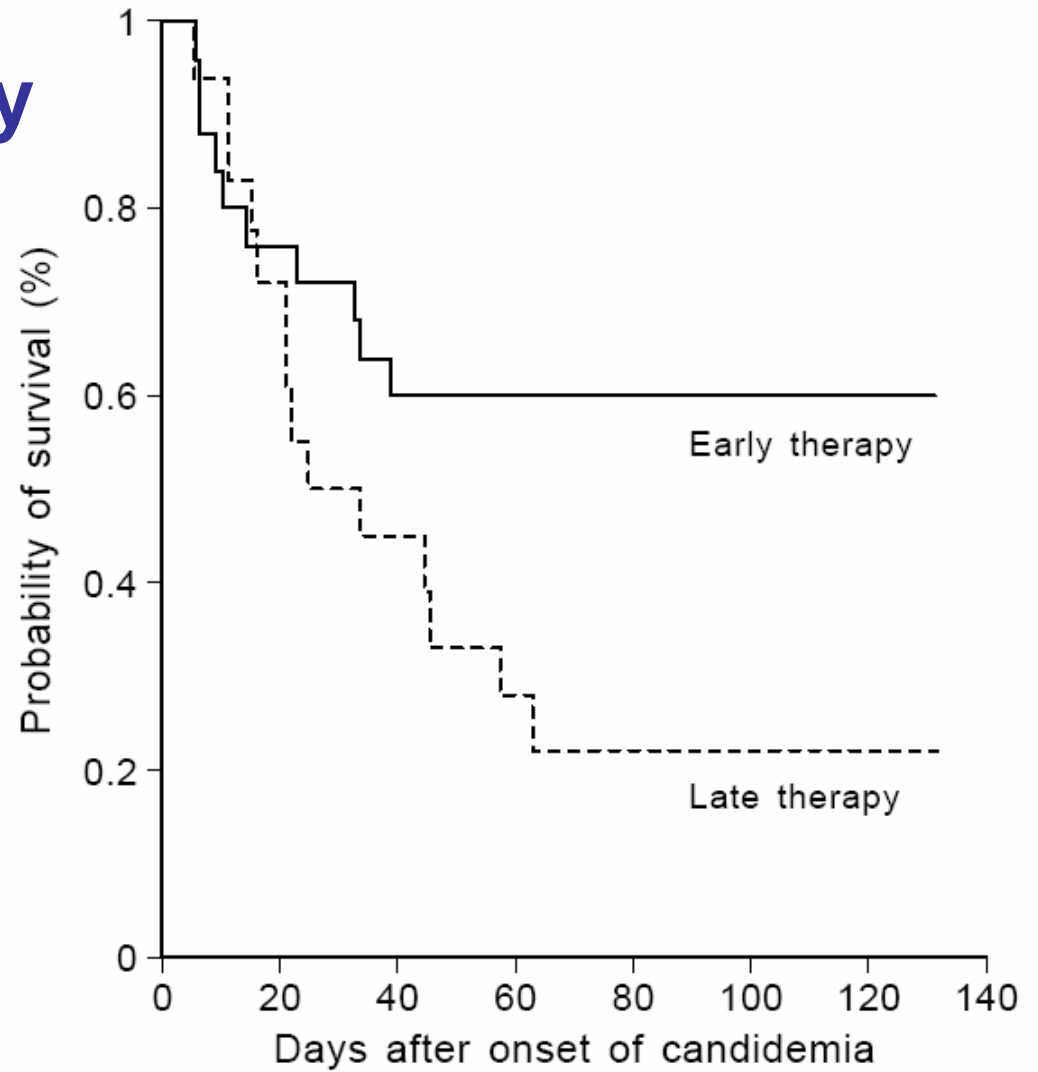
“All patients who developed candidal infections were colonized previously with strains with identical electrophoretic karyotypes”.

Multi-site fungal colonization have the same mortality as fungemia

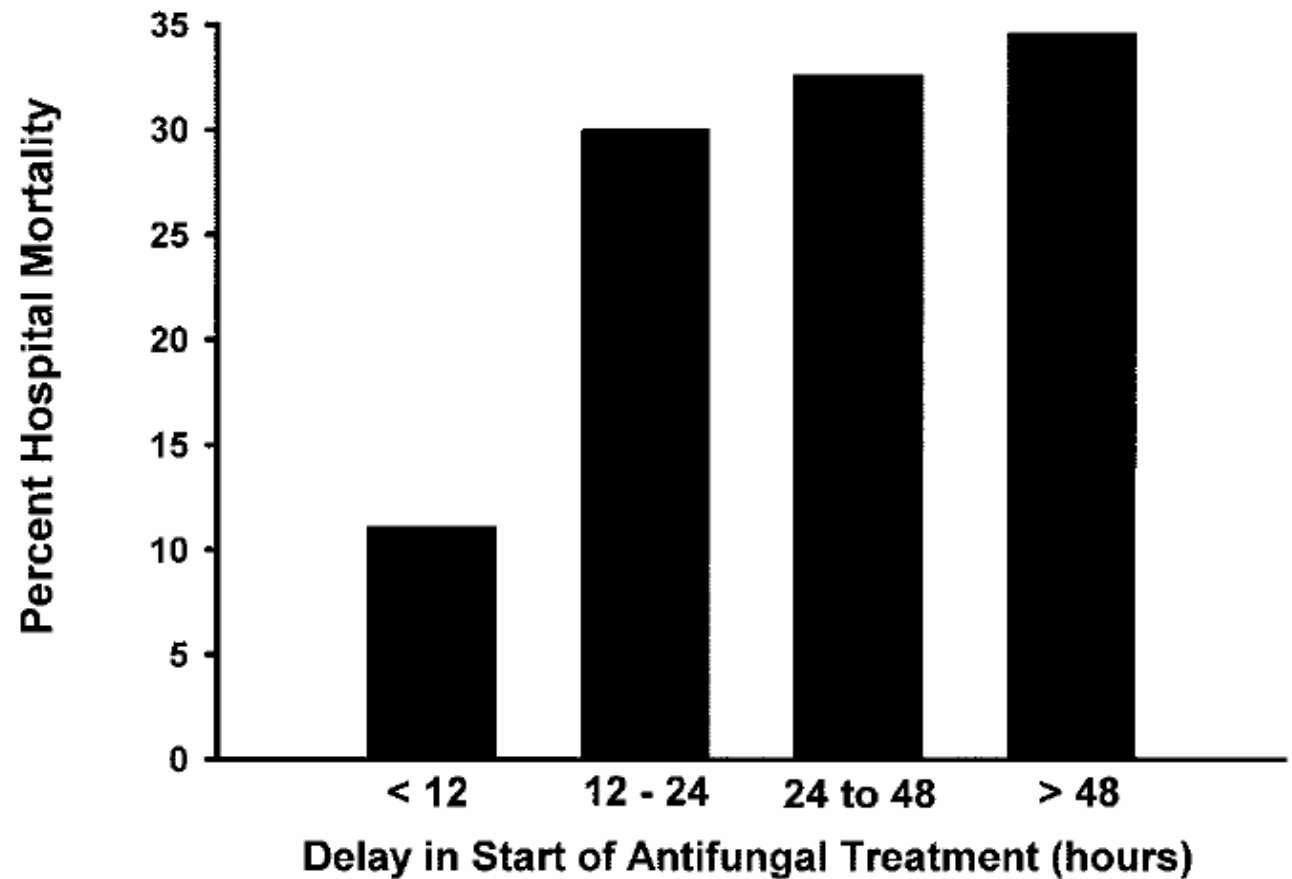
Retrospective study, ICU, 110 patients

	Mortality
Fungemia	47 %
Multi-site colonization	41 %

Early antifungal therapy improves outcome



Early antifungal therapy improves outcome



The epidemiology of fungal infections has changed

Diminished fraction of *Candida Albicans*

and

Increased fraction of *Candida glabrata* and *Candida krusei*

**This means the species diagnostic of the fungus is very important
due to the difference in resistance to antifungal therapy**

Clark TA et al. Curr Opin Infect 2002;15:569-574

Maertens J et al. Eur J Cancer Care 2001;10:56-62

Inappropriate antifungal therapy,
as defined by daily dose and in vitro susceptibility,
are a significant factor on mortality (univariate analysis)
in cancer patients with candidemia.

New definitions of invasive candidiasis

- **Multifocal candidiasis;**

simultaneous isolation of *Candida* spp. in two or more of the following locations: respiratory (bronchial secretions), digestive (gastric aspirate plus throat smear), urinary or other locations (drainage or wounds).

- **Disseminated candidiasis;**

microbiological evidence of yeasts in fluids from normally sterile sites (i.e. cerebrospinal fluid, pleural or pericardial fluids, peritoneal or biliar fluids) or histologic samples from deep organs or diagnosis of endophthalmitis or candidemia with negative catheter-tip cultures.

Better correlation to mortality rates

Respiratory, digestive and drainage foci were significant for invasive candidiasis

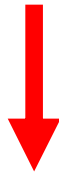
New definitions of invasive candidiasis

Invasive candidiasis is clearly **related to digestive and respiratory foci and the presence of non-*C. albicans* species.**

The simpler definition of this invasive candidiasis provided in this study may **allow earlier antifungal treatment** in order to **reduce the risk of disseminated candidiasis and the mortality it causes.**

Profylaxis of fungal infections

By profylaxis a shift in the Candida species can occur



This requires knowledge of the Candida species

Colonization and preemptive therapy

The density of fungal colonization prior to fungemia reached higher values in medical patients (mortality 85 %) than in surgical ones (mortality 42.5 %).

Therefore, colonization measurement could contribute to the candidemia risk assessment in these settings.

Antifungal therapy are a prognostic factor for better outcome (Hazard ratio 0,11 confidence interval 0,03-0,25)

Preemptive therapy could be useful in the subset of highly colonized critically ill medical patients.

Factors expressing need for increase monitoring

- Fungal infections are a serious problem in ICU
- Knowing the degree of colonization is important
- Initiating early therapy is important
- Knowing the fungus species and the susceptibility of the fungus diminishes the chance of inappropriate treatment
- Tracking efficacy of the treatment
- Keeping the resistance at a low level

**SURVEILLANCE CULTURES
YES**

