INFECTIONS FOLLOWING SEVERE BRAIN DAMAGE

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Background

Infection is a common complication of severe brain damage. In neurorehabilitation it may be a serious complication causing higher morbidity, demand for antibiotics and prolongation of rehabilitation. Medical lines and bladder dysfunctions are well-known causes of infection but are not always found to be the reason. We conducted two prevalence studies and describe the findings.

Population

We have an 84-bed neurorehabilitation hospital receiving patients with acquired brain damage as early as possible from the acute settings. The patients are divided into three units according to their medical state of health.
Group 1: Severe damage. High-level medical support.
10 beds.
Group 2: Severe damage. Standard level medical support.
54 beds.

Method

All patient files were examined on two specific days unknown to the physicians. We registered all patients with antibiotic-demanding infections, the diagnoses, medical lines, catheters, endotracheal tubes, gender, age and time since the brain damage.

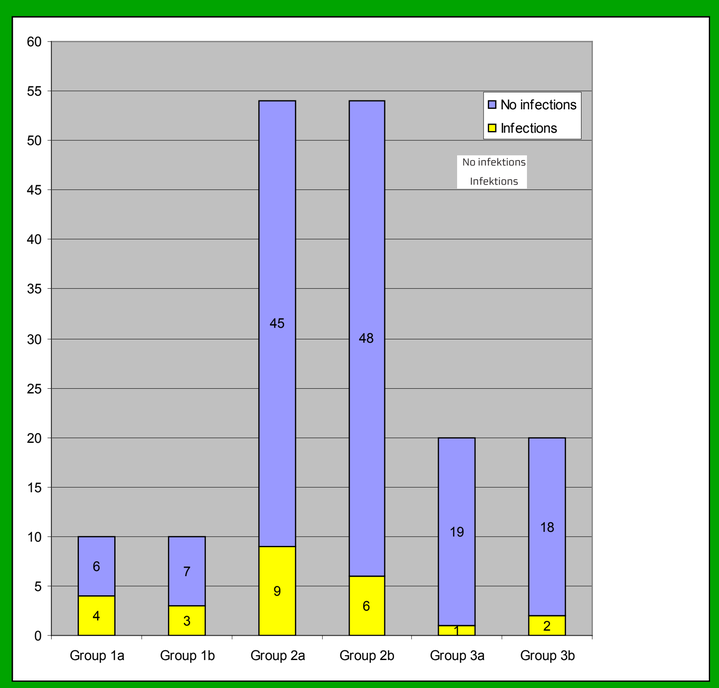
Results

Prevalence 1. 16 infections: 12 systemic and 4 localised
Invasive: 8 UTIs, 1 pulmonary, 1 skin, 2 of unknown origin

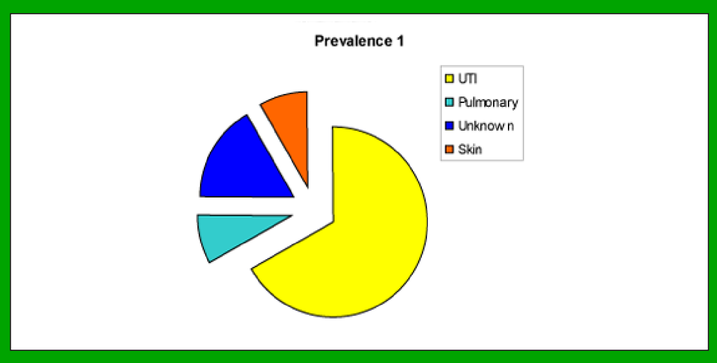
Prevalence 2: 15 infections, 11 systemic and 4 localised
Invasive: 9 UTIs, 2 pulmonary

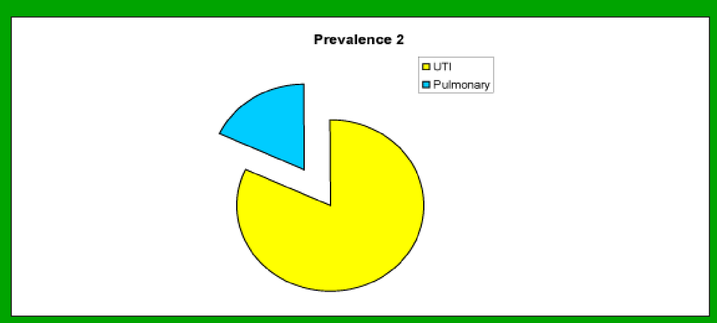
The main diagnoses in the patients with infections reflected the patient population and we found no correlation between diagnoses and infections:
36 % traumatic brain damage
26 % stroke
26 % SAH

Infections treated with systemic antibiotics in the three groups
a: prevalence 1 b: prevalence 2



Focus of the infections





Discussion

Of all UTIs, 7of 8 and 7 of 9 respectively had no bladder catheters, and all patients with bladder dysfunction were scanned twice a day for retention. None had central lines. One of three pulmonary infections and one of two invasive infections of unknown origin had a tracheal tube. UTIs were treated orally in 15 of 17 cases and intravenously in 2.

We found very different occurrences of infections in the three groups: a very high occurrence of infections in group 1 (35 %) a high occurrence in group 2 (13 %) and an acceptable rate of 7.5 % in group 3. The infections occurred at a wide range of time since the primary brain damage, from 3 to 75 weeks after the damage.

The severity of the primary damage to somatic functions seems to correlate with susceptibility to infections for a long period of time after the event, even in patients treated for retention and without medical lines or devices. We suggest immunological disturbances might be part of the explanation. Further investigation on this subject is required.

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