Middle ear problems and head and neck cancer in Greenland / the Arctic

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What is middle ear disease or otitis media?

CHRONIC SUPPURATIVE OTITIS MEDIA (CSOM)

ACUTE OTITIS MEDIA (AOM)  CHRONIC OTITIS MEDIA (COM)
What’s the problem?

- CSOM occurs at the critical time of language acquisition.
- Hearing loss
  - Delayed language and speech
  - Impaired communication abilities
  - Behaviour, concentration
  - Educational difficulties
- Chronic otorrhea
  - Parent’s lost days at work,
    - Stigmatization, contagious
- Complications: Intra-cerebral infection – 24,000 deaths/year worldwide
Chronic suppurative otitis media: CSOM

The problem

• WHO 2004:
  • 65-330 million people worldwide

WHO 1996:
”A prevalence of >1% of COM in children in a defined community indicates that there is an avoidable burden of the disease…”

”A prevalence of >4% indicates a massive public health problem of COM which needs urgent attention in targeted populations.”
Monasta et al: April 30, 2012:
Global CSOM incidence rate estimates

Worldwide prevalence of CSOM: 200.8 million cases

Cases with hearing loss (WHO def.) 20 million cases

Developing countries
Access to healthcare is limited
Poverty

Indigenous populations
Aboriginees in Australia
Polynesians
Inuit = Eskimos in the Arctic - Greenland
Ear surveys in Greenland...

Major towns
- Nuuk 16.181
- Sisimiut 5.571
- Ilulissat 4.621

Timeline:
1993-94: First survey in Nuuk and Sisimiut
1996-98: Prospective cohort study in Sisimiut
2008-10: Follow-up studies of the cohorts incl. the mother and child birth cohort in Nuuk, Sisimiut and Ilulissat

ArcticHealthWorkshop
24-04-2013
Principal study sites
CSOM/COM – the Greenlandic experience

Cohort studies:

1983-84: 3-8 year-olds  Maniitsoq > 6%
                       Kangamiut

1993-94: 3-8 year-olds  Sisimiut 12%
                       Nuuk 7%

1996-98: 0-4 year-olds  Sisimiut 14%

2008: 11-15 year-olds  Sisimiut: 19%

2009: 18-24 year-olds  Sisimiut+Nuuk: 17%
Ear surveys in Greenland

• Cholesteatoma epidemiology

• Hearing-screening of 167 schoolchildren

• Epidemiology of OM in 740 unselected children

• Middle ear and nasopharyngeal microbiology in 54 children with AOM and 201 unselected children

• Risk factors for OM in 591 children
Ear surveys in Greenland

• Prospective 2-year population-based cohort studies incl. 465 children between 0-4 years old incl. MBL study

• Long-term follow-up surveys of the above cohorts incl hearing loss

• Natural history and tympanic membrane dynamics in COM/CSOM

• POP’s and OM in approx. 200 Greenlandic children

• Biofilm in chronic- and chronic suppurative OM

• Hereditary hearing loss and GJB-2 mutations

• Mobile ear surgery results in 274 ear surgeries
Study methods

Data source: the Danish/Greenlandic Civil Registration System

Ethical approval

1. Clinical examination
   - Otoscopy, otomicroscopy, digital video-otoscopy
   - Tympanometry
   - Audiometry (pure-tone AC and BC)

2. Questionnaires

3. Medical files (paper and electronic)
Methods – Office Work

1. Evaluation of clinical, laboratory and paraclinical findings
   Comparison with findings at follow-up examinations

2. Investigation of possible associations between background information and
   CSOM using binomial logistic regression and multivariate regression
   analyses.
   • Background information collected in the studies:
     - Socioeconomic factors (educational level, housing conditions)
     - Family history of CSOM or OM
     - Use of childcare
     - Breast feeding
     - Smoking
     - Diet
     - Crowding

3. Description of hearing loss in the cohorts
Scientific contributions until now

1. 5 theses: 3 ph.d., 1 doctoral and 1 master

2. Internationally reviewed publications: > 36

3. Other publications: several
The last publication

MÅNEDSSKRIFT
for almen praksis

- Mellemarebætandelse i Grønland side 228
- Ny pensionsreform side 189
- Eksotiske virussygdomme side 199
- Helbredssundhedsolægelse ved psykisk sygdom side 219
How could this be done?

• Collaboration
Head and neck cancer in Greenland

- Nasopharynx cancer highly elevated – EBV related
- Salivary gland cancer highly elevated – EBV related
- High rate of HPV associated cervical cancer – oropharynx cancer?
- Survival is very poor – < 35% 5-year crude survival
Head and neck cancer in Greenland

ASPECTS OF THE EPIDEMIOLOGY OF NASOPHARYNGEAL CARCINOMA AND EPSTEIN-BARR VIRUS INFECTION IN GREENLAND

Jeppe Friborg

PHD thesis
University of Copenhagen, 2005

Department of Epidemiology Research
Statens Serum Institut
Årligt kontingent:
Læger: 375,00 kr
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2. Klik på ”medlemsskab”
3. Udfyld og afsend skema
4. Tillykke, du er nu medlem
TOWARDS NEW HORIZONS

- EAR PROGRAMS
- INTERVENTION
Thanks for your attention
and especially to colleges Ramon G. Jensen, Peter Bjerregaard and Anders Koch