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Pros: Experience from Scandinavian countries

MAGNUS RASMUSSEN



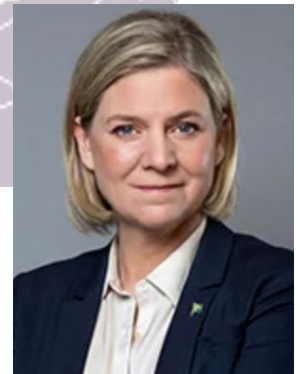
Nordic or Scandinavian countries

- Five countries in northern Europe
- Common culture and language
- Social security
- Gender equality



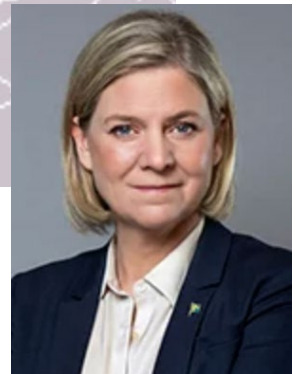
Skandinavian or Nordic countries

- Five countries in northern Europe
- Common culture and language
- Social security
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Skandinavian or Nordic countries

- Five countries in northern Europe
- Low levels of antibiotic resistance
- State-run healthcare



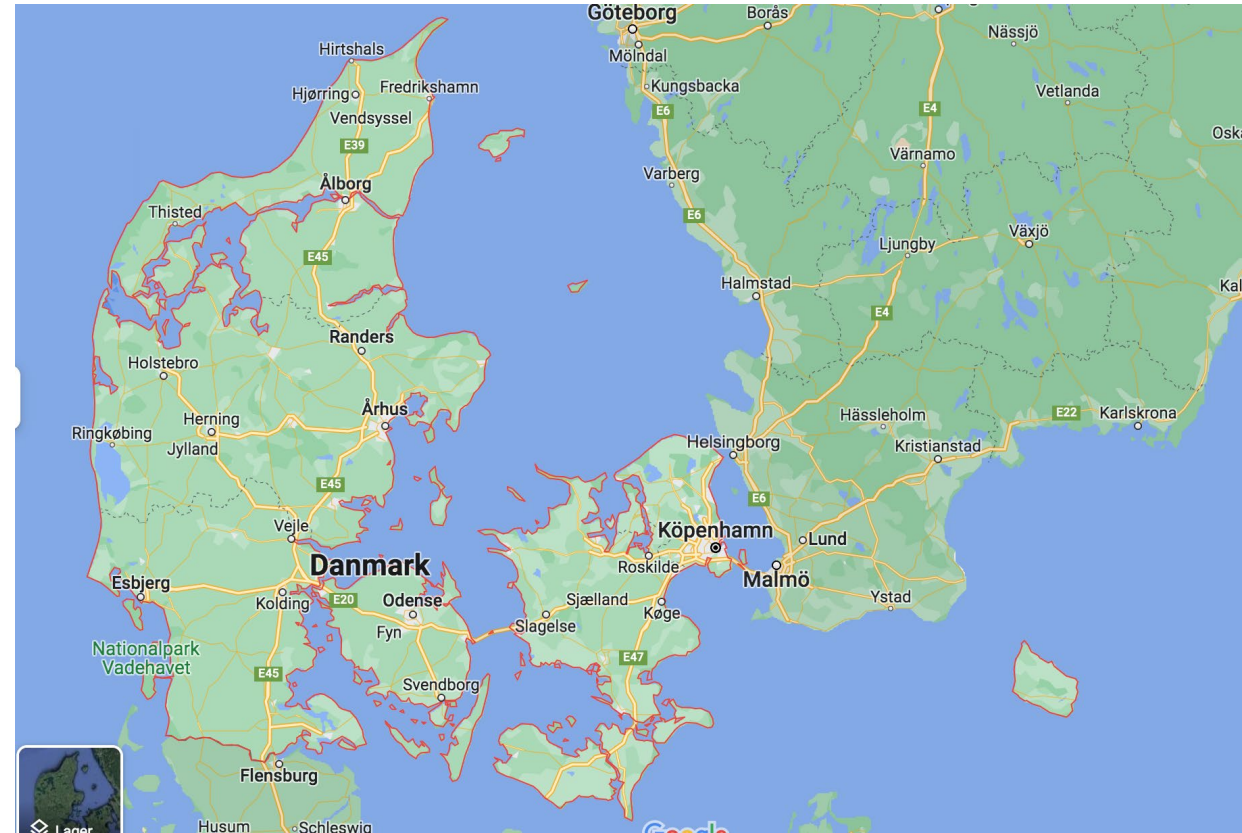
Denmark home of the POETs

- Small country with good registries
- Cardiologists responsible for IE



Henning Bundgaard

Kasper Iversen



The POET-trial

- **P**- 400 patients, left-sided IE randomized 1:1
- **I**- change to oral treatment at stability
- **C**- standard iv treatment
- **O**- death, unplanned surgery, relapse of bacteremia, embolus
- Non-inferiority design

The NEW ENGLAND JOURNAL *of* MEDICINE

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JANUARY 31, 2019

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Partial Oral versus Intravenous Antibiotic Treatment of Endocarditis

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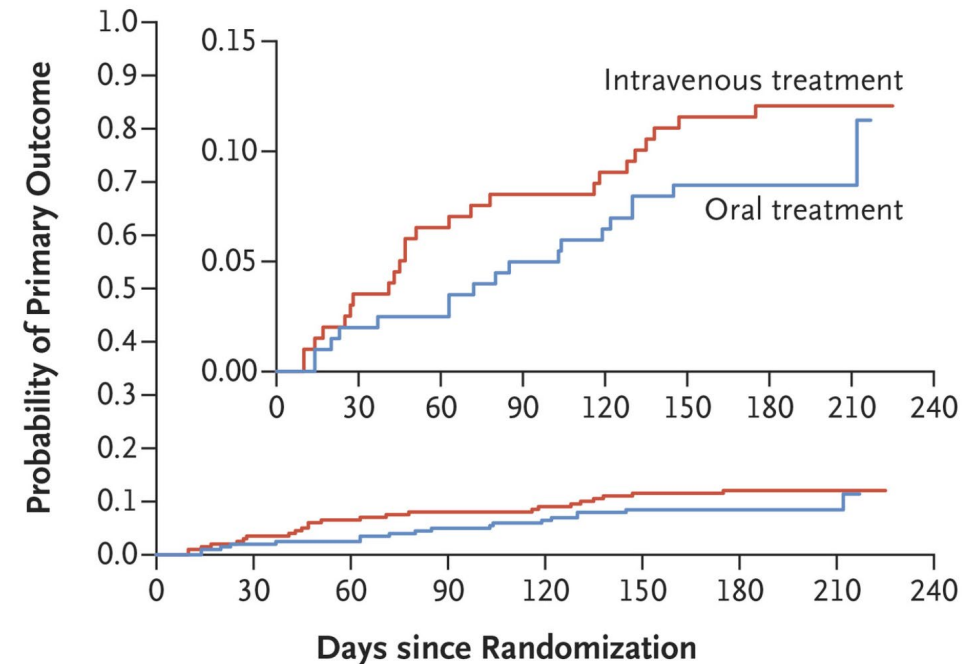
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The POET-trial

- Innovative design
- Regard IE as one entity
- Regard oral treatment as one entity

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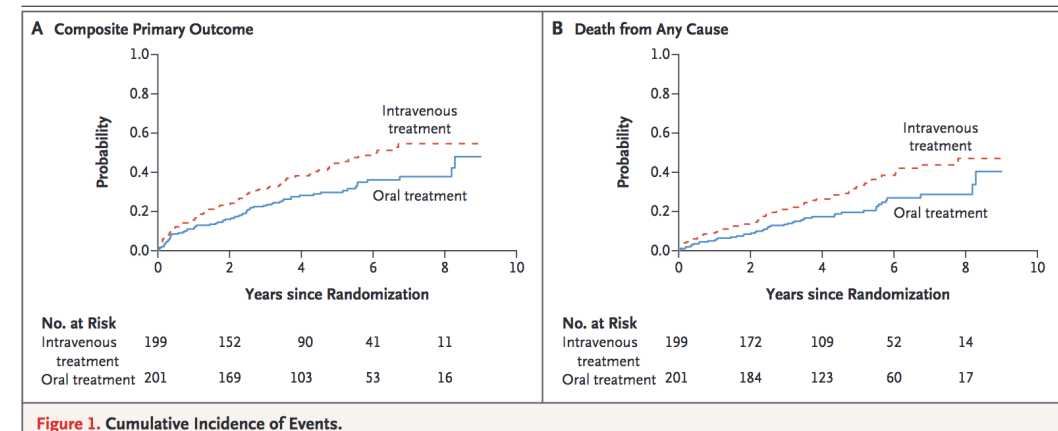
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The POET-trial

- **Regard IE as one entity**

- Left-sided
- CIED
- Prosthetic valves
- Staphylococci, *Enterococcus faecalis*, streptococci

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- **Regard IE as one entity**

- Left-sided
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- Staphylococci, *Enterococcus faecalis*, streptococci

- Very pragmatic!

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The POET-trial

- **Regard oral treatment as one entity**

Penicillin and methicillin sensitive *Staphylococcus aureus* and coagulase-negative staphylococci:

- 1) Amoxicillin 1 g x 4 and fusidic acid 0.75 g x 2
- 2) Amoxicillin 1 g x 4 and rifampicin 0.6 g x 2
- 3) Linezolid 0.6 g x 2 and fusidic acid 0.75 g x 2
- 4) Linezolid 0.6 g x 2 and rifampicin 0.6 g x 2

Methicillin sensitive *Staphylococcus aureus* and coagulase-negative staphylococci

- 1) Dicloxacillin 1 g x 4 and fusidic acid 0.75 g x 2
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Very pragmatic!!

The POET-trial implementation- Denmark

- Written national guidelines from Danish Society for Cardiology
- Implement POET!
 - According to protocol
 - Slight adjustments of choice of oral treatment



The POET-trial implementation- Denmark

- Audit to four major centres
- Approx 30% of IE patients offered oral treatment (Åhus, Roskilde)
- More than 50% (Köbenhavn)
- Patients come to the ward (Köbenhavn)
- Systematic evaluation is on-going



The POET-trial implementation- Denmark

- What is the main reason for not given oral?
 - Non-POET agent or blood culture negative
 - Complicated IE in frail patients
 - Need for continued hospitalization for other reasons
 - Some prefer iv



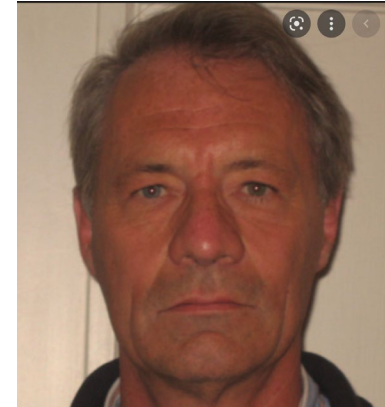
The POET-trial implementation- Sweden

- Working group for IE within Swedish Society for Infectious Diseases
- May 2019 guidelines for oral treatment
 - *E. faecalis* and non-beta streptococci IE
 - Native valves
 - Modifications of antibiotics and EUCAST harmonizations



The POET-trial implementation- Sweden

- Swedish Registry for Infective Endocarditis 2019-2021



Reported cases	1243
Alfa-strep/bovis total	402
Alfa-strep/bovis oral	11 (3%) ¹
E. faecalis total	111
E. faecalis oral	1 (1%)
HACEK total	24
HACEK oral	3 (13%)

¹Most cases amoxicillin+moxifloxacin



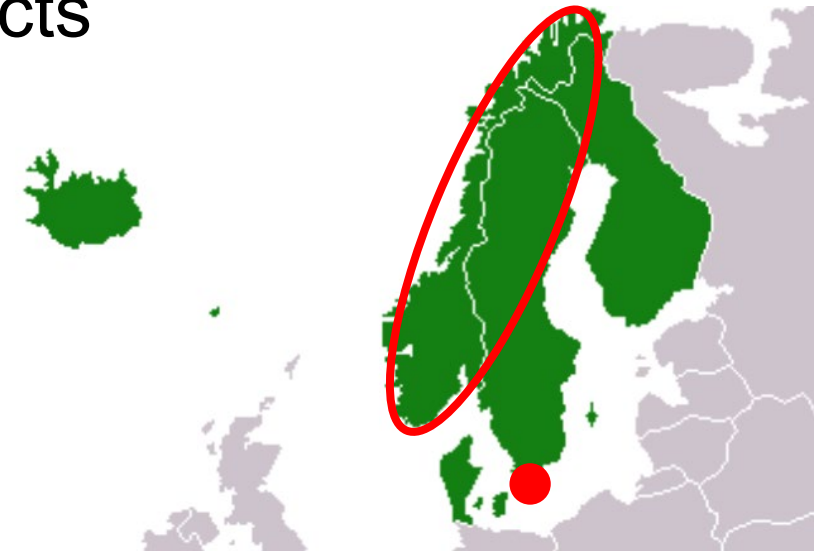
The POET-trial implementation- Sweden

- Percieved limitations
 - Infrastructure for follow-up
 - COVID-19
 - Large distances
 - Follow-up TEE
 - Competition with OPAT



The POET-trial implementation- Norway

- Oral treatment briefly mentioned in guidelines for IE with non-beta haemolytic strep
- Not implemented widely
- Concern over broad spectrum and side-effects
- Lack of organization for follow-up



The POETs continue....



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Volume 227, September 2020, Pages 40-46



Trial Design

Accelerated treatment of endocarditis—The POET II trial: Rationale and design of a randomized controlled trial

Lauge Østergaard MD ^{a, 1}, Mia Marie Pries-Heje MD ^{a, 1}, Rasmus Bo Hasselbalch MD ^b, Magnus Rasmussen MD, PhD ^c, Per Åkesson MD ^c, Robert Horvath MD ^d, Jonas Povlsen MD, PhD ^e, Sabine Gill MD, PhD ^f, Niels Eske Bruun MD, DMSc ^g, Katrine Müllertz MD, PhD ^h, Christian Ditlev Tuxen MD, PhD ⁱ, Nikolaj Ihlemann MD, PhD ^a, Jannik Helweg-Larsen MD, DMSc ^j, Claus Moser MD, PhD ^k, Emil Loldrup Fosbøl MD, PhD ^a, Henning Bundgaard MD, DMSc ^{a, 2} ✉, Kasper Iversen MD, DMSc ^{b, 2}

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Henning Bundgaard Kasper Iversen



The future of oral treatment- possibilities

- Better for the patient to be at home
- Lower risk for nosocomial complications
- Possible IE
- Better use of resources



The future of oral treatment- challenges

- Optimize oral treatment- are two antibiotics needed?
- Are prosthetic valves not different?
- Is additional TEE needed?
- Oral treatment for right-sided IE (recent case series by Kaylie Miller *et al*)?
- Maintain close follow-up!
- More science is needed!!





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