

Pihka (tuoteluokan IIB) hoitotuotteeksi



Metsäntutkimuslaitos



METLA

Farmakognosia



Nykyaikainen lääketeollisuus



Jopa 70% kaikista Yhdysvalloissa viimeisen 25 vuoden aikana esitellyistä uusista lääkkeistä on ollut peräisin luonnosta!

Kuusenpihkan käyttö haavanhoidossa on (jossain määrin) elävää luonnonlääkintää.

- yksittäiset hoitokokeilut ovat olleet menestyksekkäitä

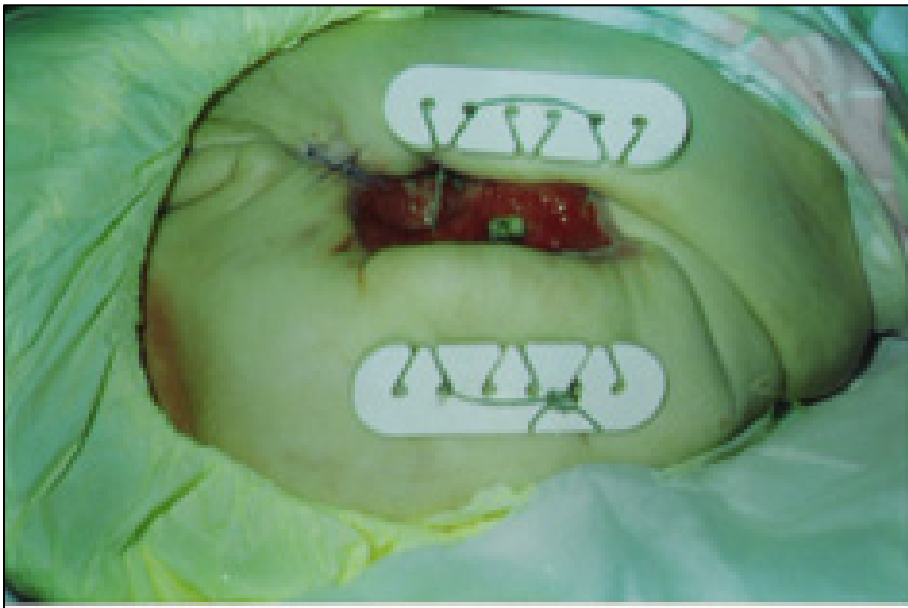
**Puhdas pihka
Meijerivoi
Perinteinen
voide**



Painehaava



- **Yleinen (15-20% vanhainkodeissa ja terveyskeskusten osastolla)**
- **Bakteereiden kasvupaikka (MRSA)**
- **Vaikea hoitaa**



Työryhmä.

- LL Arno Sipponen, Ortop. traumatol. Hus
- LL Janne Jokinen, Thx Kir. Hus
- prof. Pentti Sipponen, Patol, Hus
- LT Jouni Lohi, Yle. Suomen Terveystalo Oyj
- FT Merja Rautio, Mikrobiol, Hus
- FT Rainer Peltola, FT Pekka Saranpää, FK Tapio Laakso, FT Francoise Martz, FT Minna Männistö, Metla
- Anthony Papp, Plast. Kir.
- Prof. Seppo Sarna, FT Jorma Mäki Paakkanen, Dos. Ari Ristimäki, FT Pirkko Koukila kähkölä

A. Sipponen, MD,
Resident of Orthopaedic
Surgery, Department of
Surgery, Rheumatism
Foundation Hospital,
Heinola, Finland;
J.J. Jokinen, MD,
Resident of
Cardiothoracic Surgery,
Department of
Cardiothoracic Surgery,
Helsinki University
Hospital, Helsinki,
Finland;
J. Lohi, MD, PhD, Chief
Physician, Rovaniemi
Health Care Centre,
Rovaniemi, Finland.
Email: arno.
sipponen@patolab.fi

Resin salve from the Norwegian spruce tree: a 'novel' method for the treatment of chronic wounds

A salve made from Norwegian spruce resin has traditionally been used by the Lapp people of northern Finland to treat chronic wounds. This article reports on three cases in which the salve was used successfully on previously intractable wounds

resin salve; pressure ulcer; infection



Fig 1. Patient 1: pressure ulcer on the heel: before treatment with resin salve (a) and six months after treatment (b)



Fig 2. Patient 2: pressure ulcer on the sacrum: before treatment with resin salve (a) and right, seven months after treatment (b)



Fig 3. Patient 3: Infected amputation stump: before treatment with resin salve (a) and two months after treatment (b)

Resin-Salve from Norway Spruce - A Potential Method to Treat Infected Chronic Skin Ulcers?

Arno Sipponen¹, Merja Rautio², Janne J. Jokinen³, Tapio Laakso⁴, Pekka Saranpää⁴ and Jouni Lohi^{5,*}

¹Department of Surgery, Rheumatism Foundation Hospital, FIN-18120 Heinola, Finland; ²Division of Clinical Microbiology, HUSLAB, Helsinki University Hospital, Jorvi Hospital, 02740 Espoo, Finland; ³Department of Cardiothoracic Surgery, Helsinki University Hospital, FIN-00029 Helsinki, Finland; ⁴The Finnish Forest Research Institute, PO Box 18, FI-01301 Vantaa, Finland; ⁵Rovaniemi Health Care Centre, FIN-96100 Rovaniemi, Finland

Abstract: The home-made resin salve from Norway spruce is traditionally and widely used in folk medicine to heal various skin infections and wounds in Northern Finland. We have performed laboratory studies to solve the mechanism of resin salve. The resin salve exhibited a bacteriostatic effect against all tested Gram-positive bacteria important in human medicine including methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcus (VRE), but was not effective against Gram-negative bacteria. An exception among the Gram-negative bacteria was *Proteus vulgaris* against which resin salve was effective. High amounts of lipophilic extractives, like resin acids were dissolved into water from the resin salve. Also, a large proportion of lignans and cinnamic acid were found in the water extract.

Antibacterial effects of home-made resin salve from Norway spruce (*Picea abies*)

M. RAUTIO,¹ A. SIPPONEN,² R. PELTOLA,³ J. LOHI,⁴ J. J. JOKINEN,⁵ A. PAPP,⁶ P. CARLSON⁷
and P. SIPPONEN⁸

¹Division of Clinical Microbiology, HUSLAB, Helsinki University Hospital, Jorvi Hospital, Espoo,
²Department of Surgery, Rheumatism Foundation Hospital, Heinola, ³Finnish Forest Research Institute,
Rovaniemi Research Station, ⁴Rovaniemi Health Care Centre, Rovaniemi, ⁵Department of Cardiothoracic
Surgery, Helsinki University Hospital, Meilahti Hospital, Helsinki, ⁶Department of Plastic Surgery,
Kuopio University Hospital, Kuopio, ⁷Division of Clinical Microbiology, HUSLAB, Helsinki University
Hospital, Jorvi Hospital, Espoo, and ⁸Division of Pathology, HUSLAB, Helsinki University Hospital,
Jorvi Hospital, Espoo, Finland

Rautio M, Sipponen A, Peltola R, Lohi J, Jokinen JJ, Papp A, Carlson P, Sipponen P. Antibacterial effects of home-made resin salve from Norway spruce (*Picea abies*): APMIS 2007;115:00-00.

Resin salve made from Norway spruce (*Picea abies*) is traditionally used in folk medicine to heal skin ulcers and infected wounds. Its antimicrobial properties were studied against certain human bacteria important in infected skin wounds. The sensitivity of the resin against Gram-positive and Gram-negative bacteria was studied *in vitro* by methods that are routinely used in microbiology laboratories. The resin salve exhibited a bacteriostatic effect against all tested Gram-positive bacteria but only against *Proteus vulgaris* of the Gram-negative bacteria. Interestingly, the resin inhibited the growth of bacteria, including methicillin-resistant *Staphylococcus aureus* (MRSA) and vancomycin-resistant enterococcus (VRE), both on agar plates and in culture media. The study demonstrated antimicrobial activity of the resin salve and provided objective evidence of its antimicrobial properties. It gives some explanations why the traditional use of home-made resin salve from Norway spruce is experienced as being effective in the treatment of infected skin ulcers.

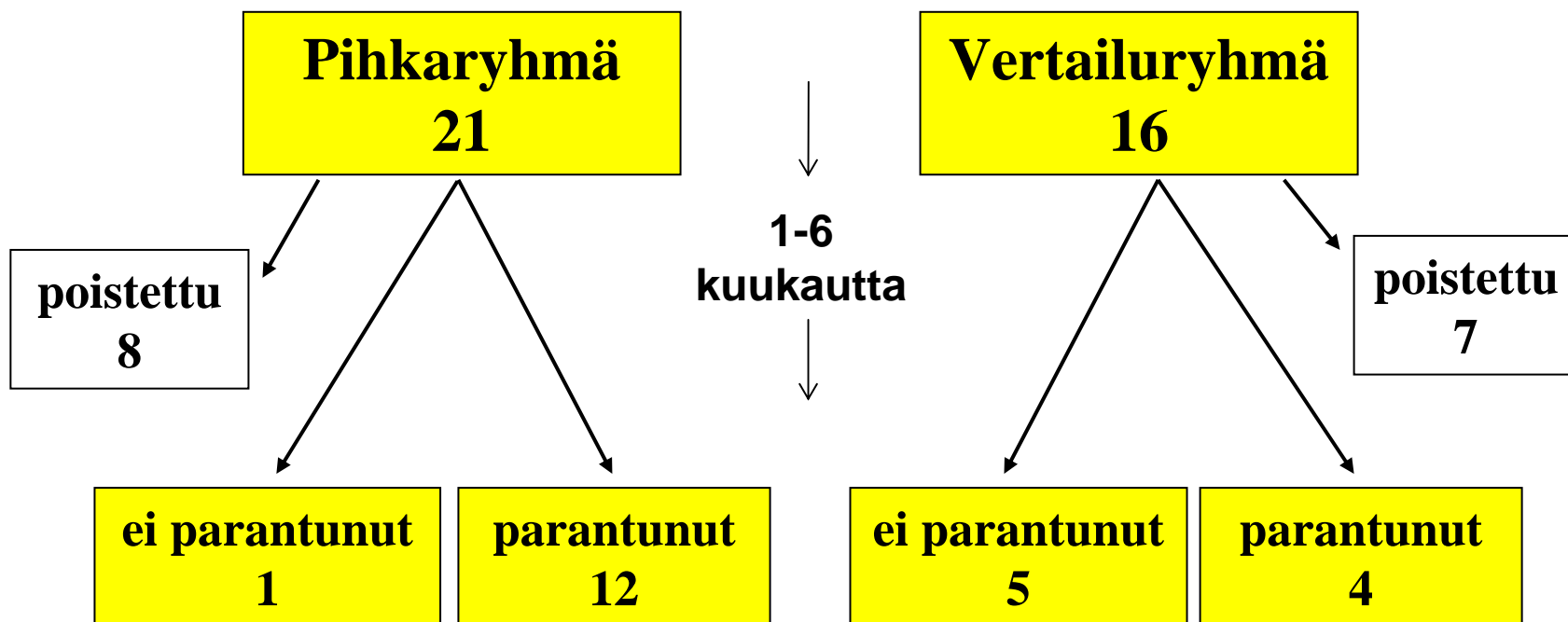
Key words: Resin; Norway spruce; microbiology; MRSA; VRE; skin ulcer; infection.

Arno Sipponen, Department of Surgery, Rheumatism Foundation Hospital, 18120 Heinola, Finland.
e-mail: arno.sipponen@patolab.fi

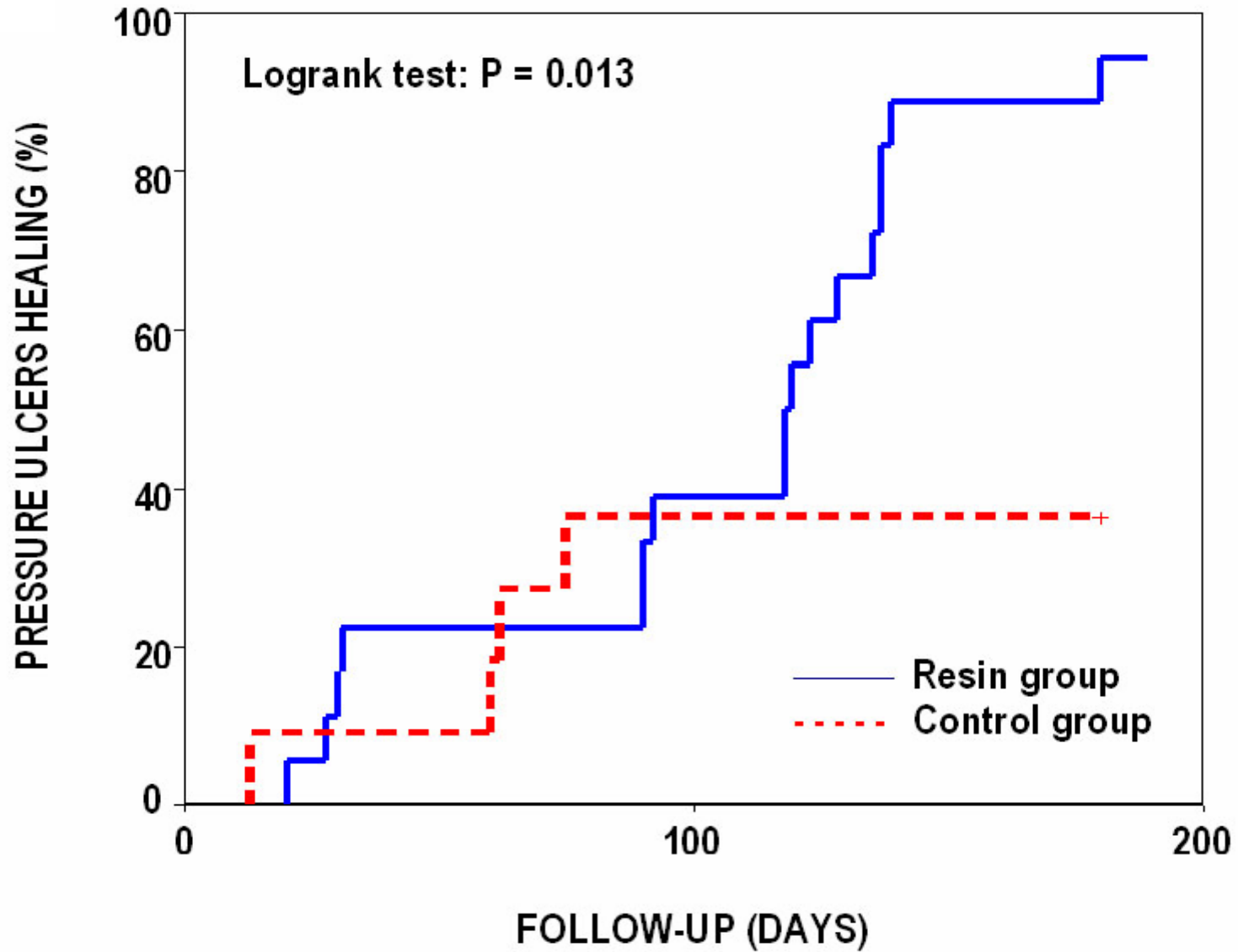
Arno Sipponen, Janne J Jokinen, Pentti Sipponen, Anthony Papp, Seppo Sarna, Jouni Lohi. The evidence of beneficial effect of the resin salve in the treatment of severe pressure ulcers- A prospective, randomised and controlled multi-centre trial.

British Journal of Dermatology.

Pihkasalvahoito. Avoin, "satunnaistettu" tutkimus 11 terveyskeskuksessa. Pihkasalva tehokkaampi kuin vertailuhoito (Hydrofiber side)!!

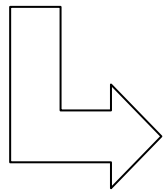


Sipponen A, ym. British Journal of Dermatology 2008



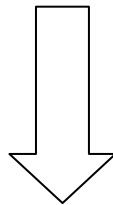
Hyväksyntä terveydenhuollon tarvikkeeksi (Lääkelaitos)

1. Kliininen arviointi + riskianalyysi



Ilmoitus lääkelaitokselle

2. Tuotantotekniikan laadunvarmistus



Hyväksyntä

Tuleeko pihkasta laajasti käytetty haavanhoitotuote?

- Raaka-ainelähde
- Raaka-aineen talteenottomenetelmä
- Talteenottomenetelmiä hyödyntävät keruuorganisaatiot
- Jalostaja/markkinoija
- Kokeellinen näyttö tehosta / virallinen hyväksyntä hoitotuotteeksi

Kaikkea löytyy!



AIKA NÄYTTÄÄ!

Jo nyt tiedossa raaka-aineen hankala saatavuus

Passiivinen keruu



Aktiivinen keruu



Pihkan aktiivinen keruu (valutus)

Kalanruoto-, eli "rill" menetelmä

