

Welcome message

Dear Colleagues,



On behalf of the organizing committee, we wish to invite you to the 4th Asia Pacific Society for Medical Mycology (APSM). It will be held on October 4th, 2008, at the Sheraton Grande Walkerhill Hotel, Seoul, Korea.

Theme is 'Superficial fungal infection'. More than 15 speakers from 7 countries are invited. The sessions are including Epidemiology of dermatophytosis, Dermatitis and *Malassezia*, Onychomycosis and Other Mycoses.

The meeting is held on the last day of the 8th ADC (Asian Dermatological Congress) at same place and organized compact in one day course. It is a good chance to meet with famous mycologists and to learn recently developed topics. It is like to add a flower on silk.

I would like express sincere thanks to the members of the Organizing Committee and supporting companies to success this meeting. Thanks again to the speakers of this meeting.

Sincerely yours,

A handwritten signature in blue ink, appearing to read 'Byung In Ro'.

Byung In Ro, M.D.

President

The 4th Asia Pacific Society for Medical Mycology



Welcome message

Dear Colleagues:



On behalf of the Board of Asia Pacific Society for Medical Mycology, I would like to express my gratitude to all of you who participate in this 4th APSMM meeting chaired by Prof. RO Byung In. We really appreciate the cooperation of Prof. Ro and the members of the organizing committee of APSMM, in Seoul. As you know we will hold the 17th Congress of the International Society for Human and Animal Mycology (ISHAM 2009) in Tokyo on May 25~29 with the satellite symposia in Beijing on May 30~31, 2009. Then I believe this 4th APSMM would give us a golden opportunity to meet many mycologists in Asia Pacific region and exchange the opinion each other with ISHAM 2009 near at hand. I hope you would enjoy our scientific program and warm friendly gathering in Seoul.

Sincerely yours,



President of APSMM



Organizing Committee

❖ President ❖
Byung In RO

❖ Vice President ❖
Baik Kee CHO, Jae Bok JUN, Ki-Hong KIM, Kyung Sool KWON, Kee Chan MOON

❖ Secretary General ❖
Hee Joon YU

❖ Vice Secretary General ❖
Woo Joo KIM, Jun Hee WOO

❖ Executive Secretary ❖
Kyu Joong AHN

❖ Treasurer ❖
Mi Woo LEE

❖ Academic Affair ❖
Jong Soo CHOI

❖ Publication ❖
Moo Kyu SUH

❖ Scientific Advisory Committee ❖
Jung Hyun CHOE, Han Uk KIM, Sin Ok KIM, Tae Hyung KIM, Jong Hee SHIN, Young Ho WON





The Asia Pacific Society for Medical Mycology (APSM) is a society to promote basic and clinical research relevant to medical mycology and to promote mutual friendship and cooperation among the Society's members. It was started by 10 members of the 6 Asian countries on September 22, 1995 in Hangzhou, China. The organization of APSM is described below and Indonesian Society for Human and Animal Mycology (INSAM) hosted the 1st Congress of APSM in Nusa Dua, Bali on December 4~7, 1997.

SOCIETY ACTIVITIES

1. holding of scientific meetings
2. publication of scientific journal
3. education and investigation relevant to medical mycology in the countries of the Asian and Pacific regions.

ORGANIZATION OF THE APSM

Chairman	: Hideoki OGAWA, M.D. (Japan)
Vice Chairman	: Duan Li WANG M.D. (China)
Vice Chairman	: Unandar BUDIULJA, M.D. (Indonesia)
Secretary General	: Byung In RO M.D. (Korea)
Deputy Secretary General	: Ryoji TSUBOI, M.D. (Japan)
	: Masataro HIRUMA, M.D. (Japan)
Treasurer	: Shinichi WATANABE, M.D. (Japan)
Directors	: Preya KULLAVANIJAYA, M.D. (Thailand)
	: Iwao TAKIUCHI, M.D. (Japan)
	: Ruo Yu LI, M.D. (China)
	: Rosario J. SOSA, M.D. (Philippines)
Auditor	: Kusmarinah BRAMONO, M.D. (Indonesia)

PREVIOUS APSM MEETING

The meeting will not be held in the same year as that of ISHAM.

1. 1st Congress: December 4~7, 1997 in Bali, Indonesia; President: Unandar Bidimulja.
2. 2nd Congress: August 22~25, 2001 in Kunming, China; President: Iwao Takeuchi.
3. 3rd Congress: March 4~6, 2005 in Bangkok, Thailand; President: Preya Kullavinijaya.



The 4th Asia Pacific Society for Medical Mycology

1. Registration Desk

1) Opening Time

October 4th (Saturday), 2008, 8:00 AM ~ 6:00 PM

2) Location

Lobby of the Presidio Room, Sheraton Grande Walkerhill Convention Center (2nd Floor).

2. Oral Presentation

1) Oral presentation will be held at Presidio Room (2nd Floor).

2) Allocated time for oral presentation:

– Original Research Paper: 20 min (15 min presentation, 5 min discussion).

3) Lecture MUST be presented with computer and beam projector

4) Beam projector presentation MUST be performed with Microsoft Power Point.

5) Any files formatted or produced by Macintosh (Apple computer) version can not be accepted. Macintosh created data MUST be converted to Microsoft windows files.

6) Data MUST be saved as USB.

7) Data MUST be turned into a preview place (rear side of Presidio Room) at least one hour prior to your presentation.

3. Slide Preview

Presenters will preview their slides at a preview place (rear side of the Presidio Room, 2nd Floor).

4. Poster Presentation

1) Panel board for Presentation number is located inside of Presidio Room (2nd Floor).

2) The size of Poster MUST be less than 90 cm (width) × 170 cm (height).



3) Installation & Removal of Poster:

- Installation of Poster: 8 AM, October 4th.
- Removal of Poster: 6 PM, October 4th.

4) Poster discussion:

- 5:00 PM – 5:20 PM, October 4th.
- Presenter should be attending in front of room during discussion time.

5. **Luncheon:** Japanese restaurant Kiyomizu or Alzer Room (ACD, B1) 12:40 PM ~ 2:00 PM

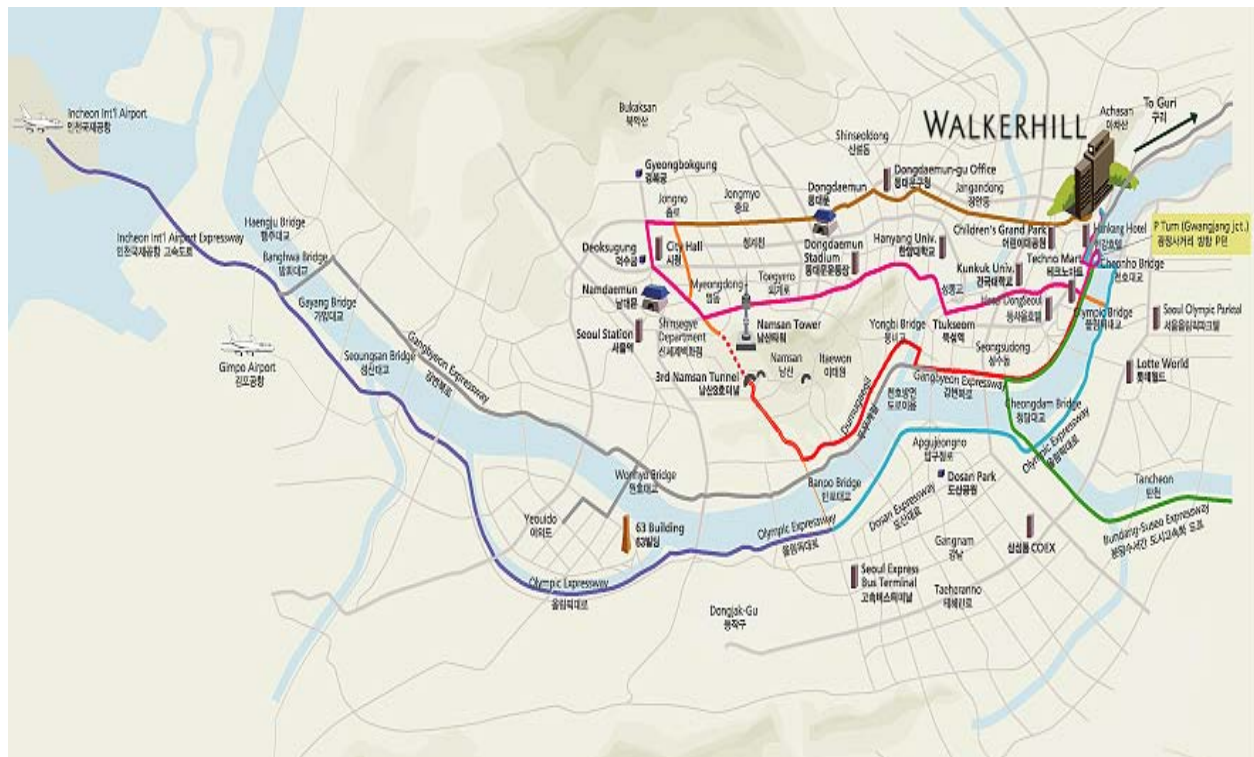
Business meeting: Korean restaurant Ondal (B1) 12:40 PM ~ 2:00 PM

6. Dinner Party

Dinner party will be held in the Four Season, main Hotel (2nd Floor) at 5:50 PM on October 4th.



The 4th Asia Pacific Society for Medical Mycology



The 4th Asia Pacific Society for Medical Mycology

1. Date: October 4 (Saturday), 2008
2. Venue: Presidio Room (2F), Sheraton Grande Walkerhill Convention Center, Seoul, Korea
3. Outline of the Meeting

Congratulatory Address	: 09:30–09:40
Session I Epidemiology of Dermatophytosis	: 09:40–11:00
SI-1, SI-2, SI-3, SI-4	
Coffee Break	: 11:00–11:20
Session II Dermatitis & <i>Malassezia</i> (Sponsored by P&G)	: 11:20–12:30
SII-1, SII-2, SII-3	
Photo	: 12:30–12:40
Luncheon: Japanese restaurant Kiyomizu (2 nd Floor)	: 12:40–14:00
Business Meeting: Korean restaurant Ondal (B1)	: 12:40–14:00
Session III Onychomycosis	: 14:00–15:40
SIII-1, SIII-2, SIII-3, SIII-4, SIII-5	
Coffee Break	: 15:40–16:00
Session IV Other Mycosis	: 16:00–17:00
SIV-1, SIV-2, SIV-3	
Session V Poster Discussion	: 17:00–17:20
General Assembly	: 17:20–17:30
Closing Remarks	: 17:30–17:40
Dinner: Four Season (2 nd Floor)	: 17:40–19:20



09 : 40 ~ 11 : 00

Session I

Chairpersons : Ki-Hong KIM, Korea
Hideoki OGAWA, Japan

- SI-1. **Changing Patterns of Dermatophytosis in Korea** (13)
Ki-Hong KIM
Department of Dermatology, College of Medicine, Yeungnam University, Daegu, Korea
- SI-2. **Epidemiology of Dermatophytosis in Indonesia** (17)
Unandar BUDIMULJA
Department of Dermato-Venereology, School of Medicine, University of Indonesia, Jakarta, Indonesia
- SI-3. **Epidemiology, Diagnosis and Management of *T. tonsurans* Infection in Japan** (21)
Masataro HIRUMA
Department of Dermatology and Allergology, Juntendo University Nerima Hospital, Tokyo, Japan
- SI-4. **Molecular Epidemiology of Cutaneous Fungal Infection in Japan** (25)
Takashi MOCHIZUKI
Department of Dermatology, Kanazawa Medical University, Uchinada, Ishikawa, Japan

11 : 20 ~ 12 : 30

Session II

Chairpersons : Byung In RO, Korea
Unandar BUDIMULJA, Indonesia

- SII-1. **Molecular Biological Work in *Malassezia* Yeast** (31)
Yang Won LEE
Department of Dermatology, Konkuk University School of Medicine, Seoul, Korea
- SII-2. ***Malassezia dermatis* in Korea** (33)
Kyu Joong AHN
Department of Dermatology, Konkuk University School of Medicine, Seoul, Korea
- SII-3. **Recent Progress in *Malassezia* Genomics: Revising the Model for Dandruff Etiology and Treatment** (35)
Jasmine KARSONO
P&G Beauty



14 : 00 ~ 15 : 40

Session III

Chairpersons : Baik Kee CHO, Korea
Ruo Yu LI, China

- SIII-1. **Causative Agents of Onychomycosis in Korea** (39)
Moo Kyu SUH
Department of Dermatology, College of Medicine, Dongguk University, Gyeongju, Korea
- SIII-2. **Pathogenesis of Onychomycosis** (41)
Azer RASHID
Department of Dermatology, Khyber Medical College & Khyber Teaching Hospital,
Khyber Medical University, Peshawar, Pakistan
- SIII-3. **Dynamics in Pathophysiology of Onychomycosis** (43)
Kazutoshi SHIBUYA
Department of Surgical Pathology, Toho University Hospital, Tokyo, Japan
- SIII-4. **Molecular Detection of Nondermatophytes in Onychomycosis** (47)
Ryoji TSUBOI
Department of Dermatology, Tokyo Medical University, Tokyo, Japan
- SIII-5. **Management of Onychomycosis** (49)
Ruo Yu LI
Department of Dermatology, Peking University First Hospital, Research Center for Medical Mycology,
Peking University, Beijing, China

16 : 00 ~ 17 : 00

Session IV

Chairpersons : Kee Chan MOON, Korea
Rataporn UNGPAKORN, Thailand

- SIV-1. **Diversity of Skin Lesions in *Penicilliosis marneffei*** (55)
Liyan XI, Xiqing LI, Junmin ZHANG, Changming LU and Zhi XIE
Department of Dermatology, The Second Affiliated Hospital, Sun Yat-Sen University, Guangzhou, China
- SIV-2. **Multilocus Microsatellite Typing for *Penicillium marneffei* Isolates from Bamboo Rats in China** (59)
Cunwei CAO, Ling LIANG*, Wenjuan WANG, Hong LUO, Donghua LIU
Department of Dermatology, the First Affiliated Hospital of Guangxi Medical University, Nanning, China
- SIV-3. **Difficult Mycoses: Treatment Options** (63)
Rataporn UNGPAKORN
Bumrungrad International Hospital, Institute of Dermatology, and Chulalongkorn Medical University,
Bangkok, Thailand



- P-1. Preferred Oral Antifungal Treatment in Toenail Onychomycosis Patients (69)
Jae Hur, Hee-Joon Yu, Kyu-Joong Ahn¹, Jee-Ho Choi², Kee-Chan Moon²
Department of Dermatology, Collage of Medicine, Hanyang University, Konkuk University¹ and
Ulsan University², Seoul, Korea
- P-2. A Experience of Survey on Tinea Pedis and Onychomyosis in the Old Healthy People Attending a Local Festival (70)
Mi-Hye Kim, Young-Sik Kim, Chan-Woo Kim, Dong-Hoon Shin, Jong-Soo Choi, Ki-Hong Kim
Department of Dermatology, Yeungnam University College of Medicine, Daegu, Korea
- P-3. White Superficial Onychomycosis in a 6-Year-Old Boy Caused by *Trichophyton rubrum* (71)
Kyung-jin Lee, Koang-Hyun Choi, Eun Lee, Hyun-Jung Park, Jun-Young Lee, Baik-Kee Cho
Department of Dermatology, St. Mary's Hospital, College of Medicine,
The Catholic University of Korea, Seoul, Korea
- P-4. Proximal Subungual Onychomycosis in a Kaposi Sarcoma Patient Caused by *Trichophyton rubrum* (72)
Jae-In Lee, Jung-Ah Min, Young-Bok Lee, Hyun-Jung Park, Jun-Young Lee, Baik-Kee Cho
Department of Dermatology, St. Mary's Hospital, College of Medicine,
The Catholic University of Korea, Seoul, Korea
- P-5. Clinical and Mycological Study of Tinea Capitis Presented in Adults Living in Daegu (73)
Jong Hoon Won, Min Jung Lee, Dong Nyeok Hyun, Joon Soo Park, Hyun Chung
Department of Dermatology, The Catholic University of Daegu School of Medicine, Daegu, Korea
- P-6. A Case of Chronic Tinea Capitis Who Showed Resistance to Various Antifungal Agents (74)
Min Jung Lee, Jong Hoon Won, Dong Nyeok Hyun, Joon Soo Park, Hyun Chung
Department of Dermatology, The Catholic University of Daegu School of Medicine, Daegu, Korea
- P-7. A Case of Kerion Celsi Caused by *Trichophyton tonsurans* in Female Wrestler (75)
Seung Hun Lee, Chi Yeon Kim, Jong Soo Choi¹, Chee Won Oh
Department of Dermatology, School of Medicine, Gyeongsang National University, Gyeongsang Institute of
Health Science, Jinju and Department of Dermatology, College of Medicine, Yeungnam University, Daegu¹, Korea
- P-8. A Case of Papules Caused by *Trichophyton rubrum* on the Scrotum (76)
Seong-Min Kim, Seung-Yong Lee, Jin Park, Kyung-Hwa Nam, Seok-Kweon Yun, Han-Uk Kim
Department of Dermatology, Chonbuk National University Medical School, Jeonju, Korea



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- P-9. **A Case of *Trychophyton mentagrophytes* var. *erinacei* Infection from the Patient's Pet Hedgehog** (77)
 Kyung-Jin Lee¹, Jung-Ah Min¹, Young-Bok Lee¹, Hyun-Jung Park¹, Shin-Taek Oh¹,
 Jun-Young Lee¹, Baik-Kee Cho¹, Jong-Soo Choi²
 Department of Dermatology, College of Medicine, The Catholic University of Korea, Seoul, Korea¹ and
 Department of Dermatology, Collage of Medicine, Yeungnam University, Daegu, Korea²
- P-10. **Tinea Manus Caused by *Trychophyton mentagrophytes* var. *erinacei* from the Hedgehog** (78)
 Jong-Ho Lim¹, Hyung-Ok Kim¹, Jong-Soo Choi², Sang-il Kim³, Young-Min Park¹
¹Department of Dermatology, ³Department of Infection, College of Medicine, The Catholic University of Korea,
 Seoul and ²Department of Dermatology, Collage of Medicine, Yeungnam University, Daegu, Korea
- P-11. **A Subcutaneous Candidal Abscess in the Patient with Iatrogenic Cushing Syndrome** (79)
 Jung-Hyun Han, Jee-bum Lee, Seong-jin Kim, Seung-Chul Lee, Young-Ho Won
 Department of Dermatology, Chonnam National University Medical School
- P-12. **The Biological Investigation on the Distribution of *Malassezia* Yeasts on Atopic Dermatitis Patients** (80)
 Jong Hyun Ko, Byung Ho Oh, Sang Min Kim, Young Chan Song, Sang Hee Lim, Yang Won Lee,
 Yong Beom Choe, Kyu Joong Ahn
 Department of Dermatology, School of Medicine, Konkuk University, Seoul, Korea
- P-13. **A Case of Tinea Corporis Caused by *Microsporum gypsum* and Keloid While Treating Tinea Corporis with Glacial Acetic Acid** (81)
 Moo Kyu Suh, Gyo Shin Kang, Gyoung Yim Ha¹, Jung Ran Kim²
 Departments of Dermatology, Laboratory Medicine¹ and Pathology², College of Medicine,
 Dongguk University, Gyeongju, Korea
- P-14. **A Case of Localized Skin Infection Due to *Scedosporium apiospermum*** (82)
 Moo Kyu Suh, Woo Tae Ko, Gyoung Yim Ha¹, Jung Ran Kim²
 Departments of Dermatology, Laboratory Medicine¹ and Pathology², College of Medicine,
 Dongguk University, Gyeongju, Korea
- P-15. **A Case of Chromoblastomycosis Caused by *Fonsecaea pedrosoi*** (83)
 Moo Kyu Suh, Gyo Shin Kang, Gyoung Yim Ha¹, Gwang Sung Choi², Jeong Hyun Shin², Won Kyu Hong²
 Department of Dermatology & Laboratory Medicine¹, College of Medicine, Dongguk University, Gyeongju and
 Department of Dermatology, Inha University School of Medicine², Incheon, Korea
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SESSION I

Chairpersons : Ki-Hong KIM, Korea
Hideoki OGAWA, Japan



Changing Patterns of Dermatophytosis in Korea

Ki-Hong KIM

Department of Dermatology, College of Medicine, Yeungnam University, Daegu, Korea

Dermatophytosis is a common disorder that dermatophytes infect skin, hair and nail, and occupied 10~20% of all dermatologic out-patients in Korea. Its clinical features has close relationship between host (human) and fungus (dermatophytes); social environments and life patterns may affect their clinical patterns and their causative agents. During recent 60 years after foundation of Republic of Korea in 1948, GDP has been increased explosively, 746 folds, and that economic developments brought abrupt changes of social environments and life patterns in Korea. Furthermore, there had been great social events; Korean War in 1950~1953, the Asian Game in 1986, the Olympic Game in 1988 and the World Cup in 2002. Those events gave much chances for dermatophytes to move.

Tinea pedis is the most common one in Korea now. It occupied 26% of all dermatophytosis in late 1950s, and has been increased by 40.9~42.2% in 1970s~1990s. The patients with tinea pedis have high rate of family infection and also high coexisting dermatophytosis. Age distribution of the patients also changed; most common in 30s, followed by 20s, and 40s in 1994, while most common in older than 60, followed by 50s, and 30s in 2005. The most common isolate was *Trichophyton(T.) rubrum*, followed by *T. mentagrophytes* and *Epidermophyton(E.) floccosum*. And tinea unguium has been increased as tinea pedis do; It was 2.8% of all dermatophytosis in late 1950s, and increased by 5.1~14.2% in 1970s, 5.5~15.3% in 1980s and 17% in 1990s. Tinea cruris also changed; Its incidence was 5% of all dermatophytosis in 1940s, and increased by 10.2% in late 1950s, and 26.6~39.1% in 1970s. In 2007, 84.7% of the patients with tinea cruris had tinea pedis.

Tinea capitis showed the most dramatic changes. Its incidence was the highest just after Korean War, 26.5% of all dermatophytosis in late 1950s, and decreased abruptly by 4.9% in late 1960s, and 2~4% since 1970s. *Microsporum(M.) ferrugineum* was the most common isolate till 1970s, and abruptly decreased and now nearly disappeared since late 1990s. *T. violaceum* was isolated in Cheju island. After Korean war, *T. schoenleinii* was isolated from favus and disappeared now. *M. canis* was isolated for the first time in 1959 and has been the most common isolate from tinea capitis since late 1970s. *T. verrucosum* was isolated for the first time in 1986 in Kwangju area. and has been isolated nation-widely. *T. tonsurans* was isolated for the first time in 1995 in Daegu and spread among wrestlers, judo players and Korean traditional wrestlers. It might be imported by wrestlers with sport exchanging program. Age distribution of the patients with tinea capitis was



57.1% in less than 10, and 34.3% was adult in 2006. Many isolate from adult patients with tinea capitis were *T. rubrum* in 2003 in Seoul.

All these findings suggest that changing patterns of dermatophytosis in Korea give us a good example how socioeconomic change affect epidemiology of dermatophytosis. Environments and socioeconomic conditions are changing, and international travel and sports exchanging program are increasing. It is our duty to check it carefully and continuously.



◆ CURRICULUM VITAE ◆

Name: Ki-Hong KIM, M.D., Ph.D.
 Present status: Professor in Department of Dermatology,
 College of Medicine, Yeungnam University, Daegu,
 705-717, Republic of Korea



❖ EDUCATION ❖

1971. 2 School of Medicine, Kyungpook National University
 1974. 2 Graduate School, Kyungpook National University (Master)
 1982. 2 Graduate School, Kyungpook National University (Ph D)

❖ TRAINING AND POSTTRAINING EXPERIENCES ❖

1971 ~ 1976 Residency; Dermatology, Kyungpook National University Hospital, Daegu, Korea
 Jan-Dec. 1989 Visiting dermatologist at mycology laboratory in Department of
 Dermatology, Louisiana States University Medical Center in New Orleans, USA
 1985 ~ 1996 Editorial board of Korean Journal of Dermatology
 1984 ~ 1998 Chairman in Department of Dermatology
 College of Medicine, Yeungnam University, Daegu, Korea
 2000. 10 ~ 2001. 10 Vice president of the Korean Dermatological Association
 2002. 05 ~ 2004. 05 Vice president of the Korean Society for Medical Mycology
 2005. 05 ~ 2006. 05 President of the Korean Society for Medical Mycology
 12/31 '96 ~ 2007. Editorial board of Korean Journal of Medical Mycology
 11/1 '84 ~ present Assistant professor, Associate professor and Professor
 in Department of Dermatology,
 College of Medicine, Yeungnam University, Daegu, Korea

❖ MEMBERSHIP ❖

1971 ~ present Member of Korean Medical Association
 1976 ~ present Member of the Korean Dermatological Association
 1979 ~ present Member of the Society of Korean Leprologist
 1993 ~ present Member of ISHAM
 1994 ~ present Member of American Academy of Dermatology
 1996 ~ present Member of the Korean Society for Medical Mycology



MeMo



Epidemiology of Dermatophytosis in Indonesia

Unandar BUDIMULJA

Department of Dermato-Venereology, School of Medicine, University of Indonesia, Jakarta, Indonesia

Indonesia is an archipelago, a country consisting of approximately 17500 islands with a tropical climate. The estimated population in 2007 was 234 million with an estimation of GDP US\$ 3.735 per capita.

Dermatophytosis is a superficial fungal infection which is confined to the stratum corneum, hair and nails. The etiology of dermatophytosis is a group of taxonomically related fungi called dermatophytes.

According to their habitat and pattern of infection, they are classified as geophilic (earth loving), zoophilic (animal loving) and anthropophilic (man loving).

Due to the predisposing factors in tropical countries e.g.Indonesia, socio-economic, social and hygienic habits of the people, superficial mycosis such as dermatophytosis is still high in incidence.

Several data of dermatophytosis will be presented based on studies in Indonesia.

Special presentation on a rare form of tinea will also be discussed.



♦ CURRICULUM VITAE ♦

Name: Unandar BUDIMULJA
Place of Birth: Semarang, Indonesia
Date of Birth: August 12, 1930
Address: Jl.Kesehatan Raya No.3, Jakarta 10160 - Indonesia
Education: Medical Doctor 1960
Dermato-Venereologist 1963
Doctor of Medicine 1980



❖ PROFESSIONAL TRAINING & EXPERIENCES ❖

- Practical Training: University Hospital Erasmus 1967~1968, Rotterdam, The Netherlands
- Medical Mycology Course 1968, Baarn, The Netherlands
- Workshop on Clinical Trial 1985, Medical Faculty of the University of Indonesia, Jakarta, Indonesia
- Practical Skin Pathology Course 1986, Amsterdam, The Netherlands
- Workshop: Hazards in the Workplace 1988, Standford, Palo Alto, USA
- Workshop: Dermato Therapeutic Update 1988, Standford, Ixtapa, Mexico
- Dermato Pathology Diagnosis Course 1988, University of Indonesia, Jakarta, Indonesia
- Hospital Management Course 1990, Jakarta, Indonesia

- Dermato-Venereologist Brevet, 1963
- Appointed as Lecturer, 1973
- Appointed as Professor, 1990
- Emeritus Professor since November 2000

❖ ACTIVITIES ❖

- Teaching: Medical Students
Dermato-Venereologists
PH.D. students
- as Promoter
- as Peer Reviewer
- as Examiner at the University of Indonesia and several other Universities throughout Indonesia



❖ ORGANIZATION ACTIVITIES ❖

National

- 1989 ~ 1995 Chairman for Education & Profession for the Indonesian Society for Dermato-Venereology
- 1995 ~ 1999 Advisory Member for the Indonesian Society for Dermato-Venereology
- 1989 ~ 2000 Founder & President of the Indonesian Society for Medical Mycology
- 1999 ~ Present Chairman of the Indonesian Working Group for Dermatormycosis
- 2000 ~ Present Advisory Member of the Indonesian Society for Medical Mycology

Regional & International

- 1990 ~ 1995 International Advisory Council Member International Society for Tropical Dermatology
- 1991 ~ 1994 Vice President of the International Society for Human and Animal Mycology (ISHAM)
- 1993 Executive Chairman Dermato Therapeutic Update Bali, Indonesia
- 1994 Chairman and Convener at the Symposium on Recent Development in Diagnosis and Treatment of Subcutaneous Mycosis, ISHAM X CONGRESS, Adelaide, Australia
- 1996 Visiting Speaker of the League of Association Dermatology Society (LADS) to Singapore, Malaysia, The Philippines, Thailand
- 1996 ~ Present Founder and Vice President of Asia Pacific Society for Medical Mycology (APSM)M)
- 1997 President of the First Congress APSMM Bali, Indonesia

❖ AWARDS ❖

- 1990 Urge Award for University Research Graduate Education
- 1990 Satya Lencana Karya Nasional Award from the President of the Republic of Indonesia
- 1997 & 1999 Award for International Publication from the University of Indonesia
- 1997 Adi Satya Utama Award from the Indonesian Medical Association
- 1999 Satya Bakti Wirakrida Award from the Indonesian Society for Dermato-Venereology

❖ INTERNATIONAL AWARDS ❖

- 1987 Certificate for Scientific Advisor in Clinical Research for Professional Knowledge, for Interest in Research and from Application of the Recent Discoveries in Medicine from Dr. Paul Janssen, Beerse, Belgium
- 2006 Honorary Member of the Japanese Society for Medical Mycology, Tokyo, Japan



MeMo



Epidemiology, Diagnosis and Management of *T. tonsurans* Infection in Japan

Masataro HIRUMA

Department of Dermatology and Allergology, Juntendo University Nerima Hospital, Tokyo, Japan

INTRODUCTION

Infection with the anthropophilic fungus *Trichophyton tonsurans* has spread among members of combat sports clubs and has become a serious public health problem in Japan and other countries. Infection usually provokes only a weak inflammatory response, and treatment compliance tends to be poor. To assess the prevalence of *T. tonsurans* infection, we surveyed about 1000 subjects in 49 institutions using a questionnaire and the hairbrush method. Overall, 115 subjects (11.5%) were positive by the hairbrush method. For the purpose of controlling this infection, a treatment that used the result from the hairbrush method as an index was evaluated. We also recently developed a real-time PCR TaqMan assay as a culture-independent method for the rapid detection of *T. tonsurans* from hairbrushes. *T. tonsurans* has seven genotypes in a variable internal repeat (VIR) region of the rRNA gene, all 101 isolates obtained from Japanese Judo practitioners had the identical genotype. This suggests that a specific genotype strain occurs throughout Japan.

METHOD

Of 327 martial athletes in the 12 sites investigated, 69 who tested positive by the hairbrush method were subjected to this study. a. If the number of colonies as observed by the hairbrush method was 4 or fewer, the hair was washed with miconazole shampoo. b. If the number of colonies was 5 or more, 1) itraconazole at a dose of 100 mg/day for 6 weeks or at a dose of 400 mg/day for 1 week, or 2) terbinafine at a dose of 125 mg/day for 6 weeks or at a dose of 500 mg/day for 1 week was administered. Subsequently, the presence or absence of colonies was evaluated by the hairbrush method at 1.5 months and 3 months after treatment.

RESULTS

Using the hairbrush method, 5 or more colonies were detected in each of 46 subjects. The *T. tonsurans* test was negative in 32 (69.6%) subjects who were orally administered terbinafine or itraconazole in compliance with their treatment schedule; however, the test was not negative in individuals who discontinued the treatment. Twenty-three subjects with 4 or fewer



colonies were indicated for treatment with a shampoo containing miconazole hydrochloride. The test was negative in 15 (65.2%) subjects and revealed an increase in the number of colonies in 6 (26.0%) of them. The results of 2 (8.7%) subjects were unknown.

CONCLUSION AND DISCUSSION

The pulse-dose regimen for terbinafine or itraconazole was the preferred option in this study because it seemed difficult for athletes to continue taking a drug for as long as 6 weeks. We considered this oral treatment protocol to be effective. However, 1) there were, in fact, some subjects who were not able to complete the treatment or complied poorly with their treatment schedule, and 2) the *T. tonsurans* test was not negative in 35% of the subjects treated with a shampoo. Perhaps the cut-off number (i.e., 4 colonies isolated by the hairbrush method) specified in our protocol should be reduced, and more participants should be treated with systemic therapy. In order to eradicate this disease, we have renewed the guidelines for *T. tonsurans* infection.

In another trial, one Judo club where 11 (35%) of 31 athletes were positive for *T. tonsurans* infection was treated with the prescribed protocol. We continued to conduct screening examinations every year in the month of april, when new university enrolment occurs. During three-and-a-half years of follow-up, there have been no outbreaks of the infection among the members of the judo club. Our findings indicate that the spread of *T. tonsurans* infection in sports clubs can be controlled by regular mass screening examination, therapy and measures at regular intervals to prevent the infection.

We recommend that positive subjects receive treatment, but often subjects refuse treatment because infection is usually asymptomatic. The following steps are necessary to control infection: 1) determine an effective therapeutic method, 2) set guidelines for disease prevention and control of infection, and 3) establish a network among expert therapeutic institutions to optimize treatment.



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❖ EDUCATION ❖

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1978 Ph.D., Tokyo Medical and Dental University, Tokyo, Japan

❖ ACADEMIC APPOINTMENTS ❖

1978 ~ 1984 Assistant, Department of Dermatology,
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1984 ~ 1994 Assistant Professor, Department of Dermatology,
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1995 ~ 2004 Assistant Professor, Department of Dermatology,
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2001 ~ 2002 Visiting Professor, Research Center for Pathogenic Fungi and
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2004 ~ 2006 Associate Professor, Department of Dermatology,
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❖ MEMBERSHIPS ❖

1975 ~ Japanese Dermatological Association (JDA)
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1995 ~ Japanese Society for Investigate Dermatology (JSID)



MeMo



Molecular Epidemiology of Cutaneous Fungal Infection in Japan

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Several molecular methods have been introduced for the practical identification and typing of fungal pathogens isolated from human skin lesions in recent years. Among these methods, ribosomal(r) DNA genes are successfully used for strain level identification and subspecies level molecular typing of several dermatophyte species. Outbreaks of dermatophytoses caused by *Arthroderma(A.) benhamiae*, a teleomorphic member of the *Trichophyton(T.) mentagrophytes* complex and *T. tonsurans* have been recently recorded in Japan, and the analysis of subspecies level typing of these isolates is important for epidemiology and may be useful for infection control.

Cases of tinea corporis and tinea capitis caused by *A. benhamiae* were first reported in 1996. The dermatophyte has been infected from pet animals such as rabbits or guinea pigs, and reported sporadically in Japan. A nucleotide sequence analysis of internal transcribed spacer (ITS) regions of ribosomal RNA genes in fungal nuclei indicated 8 of 9 isolates were homologous. These isolates were analyzed by restriction fragment length profiles of non-transcribed spacer (NTS) regions and 4 molecular types were detected among them showing the same nucleotide sequence of ITS. Accordingly, it seems likely that several strains of *A. benhamiae* may have been brought into Japan recently, since there had been no report of isolation of the species before 1996. Possibly clonal strains showing the same NTS profiles were already widely distributed in Japan by transportation of pet animals, since the same profile was shown in strains isolated from Shimane Prefecture in western Japan, and Saitama Prefecture in central Japan.

The second topic is molecular epidemiology of *T. tonsurans* isolated from an epidemic of tinea corporis and tinea capitis among young judo, wrestling and sumo practitioners in Japan. A restriction enzyme analysis of PCR-amplicons targeting the NTS region was applied to a total 225 isolates, 164 isolates from Judo athletes, 48 isolates from wrestlers, 3 from sumo and other sports practitioners, along with 10 sporadic cases who had no history of contact with these sports. In total 8 molecular types were detected, i.e., NTS types I to VIII. Among them, 190 were classified as NTS type I, 20 as NTS type II, 7 as NTS type III and 4 as NTS type IV. NTS type IV was not exclusively isolated from tinea capitis of elderly people and the study suggested that the domestic *T. tonsurans* strain did not contribute to the present epidemic.



Key Words: Molecular epidemiology, Non-transcribed spacer region, Ribosomal RNA gene, Dermatophytoses

Acknowledgements

I would like to thank Professor J S Choi for his great help in molecular typing of *Trichophyton tonsurans*.



◆ CURRICULUM VITAE ◆

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❖ EDUCATION ❖

1975 ~ 1981 Hirosaki University, Aomori, Japan, M.D.
1982 ~ 1986 Graduate School, Shiga University of Medical Science, Shiga, Japan Ph.D.

❖ PROFESSIONAL EXPERIENCE ❖

1981 ~ 1982 Junior Resident, Department of Dermatology,
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1986 ~ 1997 Instructor, Department of Dermatology, Shiga University of Medical Science, Shiga, Japan
1991 ~ 1992 Visiting Researcher, Department of Botany, University of Texas at Austin, Texas, USA
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1992 ~ 1993 Visiting Professor (Associate), Department of Plant Pathology,
University of California at Riverside, California, USA
1997 ~ 2005 Associate Professor, Department of Dermatology,
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2005 ~ Present Professor, Department of Dermatology, Kanazawa Medical University, Ishikawa, Japan
2005 ~ Present Professor, Division of Dermatopharmacology (Novartis Pharma),
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❖ MEMBERSHIPS ❖

International Society for Human and Animal Mycology, Asia Pacific Society for Medical Mycology
The Japanese Dermatological Association, The Japanese Society for Medical Mycology

❖ RESEARCH FIELDS ❖

Clinical and molecular diagnosis of dermatophytosis, Micromorphology of pathogenic fungi



MeMo

SESSION II

Chairpersons : Byung In RO, Korea
Unandar BUDIMULJA, Indonesia



Molecular Biological Work in *Malassezia* Yeast

Yang Won LEE

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Malassezia yeasts are members of the normal flora on human skin and are recovered in 75~80% of healthy adults. However, there is great variation regarding presence and density in various skin locations in children compared with adults and in normal skin compared with various skin diseases, including pityriasis versicolor, seborrheic dermatitis (SD), *Malassezia* folliculitis, and most recently, atopic dermatitis (AD) showing its powerful allergenicity. However, there are few case control studies which have been made between *Malassezia* associated diseases and healthy controls (HC) using molecular biologic method.

So, we tried to find biological significance between *Malassezia* yeasts and human diseases. We isolated the various *Malassezia* yeasts from patients with AD, SD and age sex matched HC using 26S rDNA PCR-RFLP. Then we compared the *Malassezia* flora between AD patients group and HC by age groups and body sites. In AD patients, *M. sympodialis* was most dominant species and the portion of *M. sympodialis* and *M. furfur* has increased. In SD patients, *M. restricta* was most dominant species and the distribution of *Malassezia* species is similar to HC. But the statistically significant difference had been found in only AD patients. And continuously, the research about the distribution of *Malassezia* yeasts in acne vulgaris and *Malassezia* folliculitis is also in progress.

Most recently, whole genomic sequences of *Malassezia globosa* are revealed. So, we can now begin to unravel the relationship between *Malassezia* and human skin. And the breakthrough understanding of the relationship between human skin and *Malassezia* can lead to interruption of the pathogenic cycle.



◆ CURRICULUM VITAE ◆

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❖ ACADEMIC APPOINTMENTS ❖

2000 ~ 2001 Residency training (internship), Konkuk University Hospital
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2005 ~ 2006 Fellowship training in Dermatology, Konkuk University Hospital
2006 ~ 2007 Clinical assistant professor in Dermatology, Konkuk University Hospital
2007 ~ The present Assistant professor in Dermatology, Konkuk University Hospital

❖ ACADEMIC AWARD ❖

2002 Best Paper Award, The Korean Society for Medical Mycology
2003 Best Poster Award, The 55th Spring Meeting, Korean Dermatological Association
2003 Top graduate (Presidential citation), The Graduate School of Konkuk University
2006 Best Paper Award, The Korean Society for Medical Mycology
2006 American Academy of Dermatology scholarship award

❖ SOCIAL ACTIVITIES ❖

2006 ~ The present Vice-editor in Chief, Korean Society for Medical Mycology



Malassezia dermatitis in Korea

Kyu Joong AHN

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Malassezia yeasts are lipophilic fungi which are regarded as normal flora of the skin, and are recovered in 75~98% of healthy adults^{1,2}. *Malassezia* yeast, since first reported in 1889, are known to be implicated in various diseases, including pityriasis versicolor, seborrhoeic dermatitis and *Malassezia* folliculitis. Recently, there have been a growing number of reports which show the implication of *Malassezia* yeast in atopic dermatitis and psoriasis^{4,5}.

It was classified into 7 species, *M. furfur*, *M. pachydermatis*, *M. sympodialis*, *M. globosa*, *M. obtusa*, *M. restricta* and *M. slooffiae* in 1996 by Guého et al.⁶ Many researches into *Malassezia* yeast used morphological analysis of the size, surface, color, and shape of cultured colony and biochemical analysis^{7~10}. However, while morphologic analysis is the appropriate method for classification and identification of fungus, it is usually time-consuming, multi-step process necessitating several experimental techniques, and it does not take taxonomic component into consideration, and thus genetic link between species is not possible. So morphological and biochemical methods have many limits in identifying and classifying new species. To overcome such limits of the techniques, recent researches use various molecular biology methods such as nested polymerase chain reaction (PCR)¹¹, real-time PCR¹², pulsed field gel electrophoresis (PFGE)¹³, amplified fragment length polymorphism (AFLP)^{14,15}, denaturing gradient gel electrophoresis (DGGE)¹⁵, random amplification of polymorphic DNA (RAPD)^{15,16}, single strand conformation polymorphism (SSCP)¹⁷, terminal fragment length polymorphism (tFLP)¹⁸, restriction fragment length polymorphism (RFLP)^{19~22}, and sequencing analysis²³. Recently, on the basis of DNA relatedness through the molecular biology, four new species have been included: *M. dermatis*, *M. japonica*, *M. nana* and *M. yamatoensis*^{24~28}. Of these, *M. dermatis* had been first reported by Sugita in 2002, 5 cases being isolated in an experiment and performed on 19 atopic patients. However, no isolated cases have been reported on molecular biological experiments performed using standard *M. dermatis* strains since then. This research was conducted on 160 healthy men and women of aged 0 to 80 without any skin disease. Taking a molecular biological classification approach by analyzing the 26S rDNA PCR-RFLP patterns, we have successfully isolated 19 cases of *M. dermatis*--the first in Korea.



◆ CURRICULUM VITAE ◆

Born on April 19th, 1954 in Seoul, Korea



- | | |
|--------------------|--|
| 1978. 2 | College of Medicine, Seoul National University (MD) |
| 1983. 2 | Seoul National University Hospital (Board Certificate) |
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| 1991. 4 ~ Present | Department of Dermatology,
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| 2004. 3 ~ 2006. 7 | Superintendent, Konkuk University Hospital |
| 2007. 6 ~ Present | Secretary General, Korean Society for Medical Mycology |
| 2007. 10 ~ Present | Secretary General, Korean Dermatological Association |



Recent Progress in *Malassezia* Genomics: Revising the Model for Dandruff Etiology and Treatment

Jasmine KARSONO, J. R. SCHWARTZ, J. E. GRAY and R. C. RUST

P&G Beauty

Dandruff/Seborrheic Dermatitis is a chronic inflammatory scalp condition with many similar clinical and histological features to psoriasis. Scalp psoriasis is known to affect hair quality and integrity - diameter, fibre surface properties and induce transient hair loss. Micro-organisms, especially yeasts, play a key role in the pathogenesis of dandruff and seborrheic dermatitis by causing irritation of the scalp skin. The underlying mechanism for the impact of psoriasis on the hair quality and quantity is thought to be the inflammation of the scalp skin.

Recently, a hypothesis has emerged that points to the possibility that also the scalp irritation caused by dandruff and seborrheic dermatitis may contribute to an increase in hair shedding and a reduction in hair density. Secondly, damage to hair shafts from excoriation may occur and cause an adverse effect on hair appearance. Consequently, reduction of scalp inflammation would not only reduce the visible sign of dandruff, flakes, but would also result in an improvement of the overall appearance of hair.

Zinc pyrithione (ZPT)-containing shampoo has been shown to successfully reduce dandruff (caused by the yeast, *Malassezia globosa*) and to soothe the irritated scalp. ZPT in a shampoo and conditioner formulation has an anti-fungal activity which has been shown to reduce micro-organisms on the scalp. Reduction in micro-organisms does reduce the frequency and severity of scalp irritation. Which can improve the scalp condition and restore hair quality. Based on the hypothesis that scalp irritation, might actually be linked with hair thinning or hair loss, the anti-fungal activity of ZPT might assist with helping against hair loss associated with dandruff and breakage.

Key Words: Yeasts; Dandruff; Hair loss; Hair fall; ZPT; *Malassezia*; Seborrheic dermatitis



♦ CURRICULUM VITAE ♦

Dr. Jasmine KARSONO

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❖ INTRODUCTION ❖

Jasmine has worked at P&G for over eight years and is based in the P&G Asia Headquarters in Singapore. She began her career working in the Product Safety & Regulatory Affairs (PS&RA) department for the Personal Health Care Business Unit, and later on was responsible for Central Product Safety for most Business Units (Beauty, Baby & Feminine Care and Laundry) as part of her tenure as a Section Head for PS&RA in Asia. During this time, Jasmine has developed her expertise in drug registration requirements as well as in-depth understanding of P&G products and its technology, its safety profile and corresponding regulations in Australia, New Zealand and ASEAN countries amongst others. She has also established the Singapore PS&RA section and is highly regarded as a coach and mentor. Jasmine is also actively involved with many functions inside P&G such as Product Development, Marketing and Market Research as part of her work and is highly regarded as the "go-to" person for drug regulatory matters. Her passion for bringing innovative technologies to life, combined with her technical mastery, communication skills, creativity and eye for beauty has led her to Hair Care Scientific Communications.

❖ SPECIFIC AREAS OF EXPERTISE ❖

As Principal Scientist, Jasmine works closely with the Beauty Care Research & Development team that designs new hair care & skin care cosmetic products for the Asia Pacific region.

She is also one of Procter & Gamble's scientific spokesperson on Cosmetic Science & Technology to external authorities including government/regulatory officials, thought-leaders, dermatologists, medical doctors, beauty editors & hair stylists in Australia, India, Korea & South-East Asia.

Jasmine has a passion for breakthrough beauty product technologies that make a real difference to consumers. She loves to explore and explain the "hidden science" that is around all of us in our everyday life, which we often don't even know about, and she is all about translating this science into excitement for the users of these products.

❖ ACADEMIC QUALIFICATIONS ❖

- Ph. D., Biochemistry/Immunology, University of California San Francisco, USA.
- M.Sc., Cellular & Molecular Biology, San Francisco State University, USA.
- B.Sc., Human Biology, University of Utah, USA.



SESSION III

Chairpersons : Baik Kee CHO, Korea
Ruo-Yu LI, China



Session III-1

Causative Agents of Onychomycosis in Korea

Moo Kyu SUH

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Onychomycosis is a fungal infection of the nails, more often toenails, and can be caused by not only by dermatophytes but also by certain yeasts and nondermatophytic molds. Although dermatophytes are still the main etiologic agents of onychomycosis, some species of nondermatophytic molds and yeasts are also capable of invading the nails. The most common dermatophytes causing tinea unguium are *Trichophyton(T.) rubrum*, *T. mentagrophytes*, and *Epidermophyton floccosum*. The yeasts including *Candida(C.) albicans*, *C. parapsilosis* and *C. tropicalis* have been isolated from nails. The nondermatophytic molds, such as *Scopulariopsis brevicaulis*, *Fusarium* sp., *Acremonium* sp., *Aspergillus* sp. and *Scytalidium* sp. have been demonstrated to cause occasional cases of onychomycosis. The nondermatophytic molds are filamentous fungi that are commonly found in nature as soil saprophytes and plant pathogens and strict criteria are necessary to implicate these organisms as primary pathogens as they are often considered to be contaminants when routine cultures are examined.

In this presentation, I will discuss the causative agents of onychomycosis in Korean dermatologic literatures.



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❖ EDUCATION ❖

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❖ PROFESSIONAL SOCIETIES ❖

1983 ~ present Member of Korean Dermatological Association

1998 ~ present Member and Chief Editor of Korean Society for Medical Mycology

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Pathogenesis of Onychomycosis

Azer RASHID

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Nail infection by fungi has two designations. Onychomycosis literally means 'fungal infection of the nail', whereas tinea unguium specifically refers to dermatophyte nail infections. The most common type of fungal nail infection is distal subungual tinea unguium. The keratin of hyponychium becomes infected and the infection progresses to involve the nail bed and subsequently the nail plate. Most dermatophyte species invade the ventral layer first as it is attached to the nail bed. Occasionally, the intermediate layer is involved in the infection process. The dorsal layer of the nail plate is rarely infected except in white superficial onychomycosis which occurs almost exclusively in toe nails. Some fungi can invade the nail plate more easily than others and destroy the nail tissue. Electron microscopic study showed nail penetration through the various layers of the nail plate and within intercellular spaces. Dermatophyte fungi appeared to invade the nail by a combination of mechanical and chemical factors.



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❖ QUALIFICATIONS ❖

MBS (1981) Khyber Medical College, University of Peshawar, Pakistan
Diploma in Dermatology (1986) University of London, St. Johns Institute of Dermatology
MSc in Dermatology (1988), University of Glasgow, UK
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FRCP (2001) Royal College of Physicians and Surgeons of Glasgow, UK

❖ PRESENT POSITION ❖

Professor of Dermatology and Head Department of Dermatology, Khyber Medical College & Khyber Teaching Hospital, Khyber Medical University, Peshawar Pakistan.

❖ PUBLICATION ❖

Author of over 20 publications and chapters in a book. Invited speaker at over 30 International Conferences around the world.

❖ MEMBERSHIPS/FELLOWSHIPS ❖

- 1) Fellow of American College of Physicians (FACP)
- 2) British Council Fellow in Dermatology
- 3) Non-resident Fellow of AAD
- 4) Member EADV
- 5) Life Member and Ex-Vice President Pakistan Association of Dermatologists.
- 6) Member Board of Directors, International Society of Dermatology
- 7) Member ISHAM



Dynamics in Pathophysiology of Onychomycosis

Kazutoshi SHIBUYA

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The present paper describes detailed histopathology of onychomycosis developed in toes, which had been obtained by amputation from a patient with advanced diabetic disorder. Fungi proliferated in cuticle attaching onto the ventral portion of the proximal nail fold. A line comprising single to several cell layers of crushed fungi was also demonstrated in one-third in thickness of the nail plate, which was in contact with those proliferating in the cuticle. Based on the previous knowledge announcing that the upper one-third and the lower two-thirds in thickness of the nail plate are respectively generated by the cuticle and the dorsal nail fold and by intermediate matrix, fungi may be squeezed and accumulated at the upper one-third in depth of the nail plate of proximal portion, and advanced to the tip with growing of the nail. Result of our observation, especially position of the line of crushed fungi in the nail plate, can provide a better understanding for the pathogenesis of some particular type, so-called proximal nail fold type of onychomycosis.



◆ CURRICULUM VITAE ◆

❖ NAME AND POSITION TITLE ❖

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❖ NATIONALITY ❖

Japan (Japanese)

❖ AGE AND BIRTH ❖

51 Year-old, July 18, 1957

❖ EDUCATION ❖

Graduated from Toho University School of Medicine: 03/1983 (M.D. #277594)

B.S. from Toho University School of Medicine, Department of Pathology: 03/1987 (Ph.D. Toho University #88)

❖ PROFESSIONAL EXPERIENCE ❖

04/1987 ~ 09/1991	Assistant fellow (Department of Pathology, Toho University Ohashi Hospital)
10/1989 ~ 01/1994	Lecturer (Department of Pathology, Toho University Ohashi Hospital)
02/1994 ~ 03/2002	Associate professor (Department of Pathology, Toho University Ohashi Hospital)
04/2002 ~ 11/2004	Associate professor and chief (Department of Surgical Pathology, Toho University Omori Hospital)
12/2004 ~ 05/2005	Associate professor (Department of Surgical Pathology, Toho University School of Medicine)
06/2005 ~ now	Professor and Chairman (Department of Surgical Pathology, Toho University School of Medicine):
04/1990 ~ 03/2008	Invited lecturer (Teikyo University Institute of Medical Mycology)
04/1998 ~ now	Invited lecturer (Akita University, School of Medicine)
04/2008 ~ now	Invited professor (Chiba University)
04/2008 ~ now	Invited professor (Shanghai Chinese medicine and pharmaceutical University)



01/1996 ~ 02/1997 Guest lecturer (Training Program for Virological Diagnosis of HIV Infection, NIH of Japan)

❖ RESEARCH INTEREST ❖

1983 ~ now Diagnostic histopathology, anatomical pathology, and cytology
1983 ~ 1987 Histopathology of Pulmonary vasculitis in childhood
1985 ~ now Histopathology and pathophysiology of systemic cryptococcosis
1991 ~ now Histopathology and pathophysiology of invasive pulmonary aspergillosis
1996 ~ now Histopathological diagnosis of invasive fungal diseases using In Situ technique

❖ AWARD ❖

03/2001 Thomas Walsh Award (Focus on Fungal Infection 11, Washington)



Session III-3

MeMo



Molecular Detection of Nondermatophytes in Onychomycosis

Ryoji TSUBOI

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Onychomycosis is often caused by dermatophytes, but the role of nondermatophytes is underestimated due to the difficulty of identifying them by conventional direct microscopy and culture. This study aims to detect nondermatophytes, as well as dermatophytes, in the nail samples of toenail onychomycosis patients using a PCR-based culture-independent method. The nested PCR assay targeting the sequence of the 28S ribosomal RNA gene was used to amplify fungal DNAs extracted from 50 microscopy-positive nail specimens. Newly designed primer sets for dermatophyte universal, *Trichophyton rubrum*, *T. mentagrophytes*, *Aspergillus* spp., *Scopulariopsis brevicaulis*, *Fusarium solani*, *F. oxysporum*, *F. verticillioides*, *Candida albicans*, and *C. tropicalis* were used after confirmation of their specificity. Forty seven cases (94%) were positive for fungal DNA, among which dermatophytes were detected in 39 cases (83.0%): *T. rubrum* in 35 cases (74.5%) and *T. mentagrophytes* in 8 cases (17.0%). Surprisingly, nondermatophytes were detected in 18 cases (38.3%), both dermatophytes and nondermatophytes in 10 cases (21.3%) and nondermatophytes alone in 8 cases (17.0%). *Aspergillus* spp. alone was observed in 5 cases (10.6%). This study indicates that most of the affected nail plates of onychomycosis patients were positive for specific fungal DNAs, and suggests that nondermatophytes are highly involved in the pathogenesis of onychomycosis.



◆ CURRICULUM VITAE ◆

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❖ EDUCATION AND WORK HISTORY ❖

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1987 ~ 1989	New York University Medical Center, Postdoctoral Fellow (Cell Biology)
1998 ~ 2002	Associate Professor, Department of Dermatology, Juntendo University School of Medicine
1990 ~ 1998	Assistant Professor, Department of Dermatology, Juntendo University School of Medicine
2002 ~ present	Professor and Chairman, Department of Dermatology, Tokyo Medical University

❖ PROFESSIONAL INTERESTS AND SPECIALIZATIONS ❖

Wound healing and growth factors

Hair disorders and hair growth mechanism

Fungal infection and molecular diagnosis

Atopic dermatitis and host defense



Management of Onychomycosis

Ruo Yu LI

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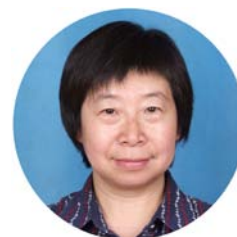
Onychomycosis is accounting for up to 50% of all nail disorders. Typically, 2~3% of the adult population are affected. Several multi-centered studies on the pathogenic fungi of onychomycosis revealed that dermatophytes were the most dominate pathogen, ranging from 68~81%, while yeasts and other moulds could also be isolated, ranging from 7.9~28% and 4.0~11.5% separately. Mixed infections caused by dermatophytes, yeasts and moulds could be identified. Since onychomycosis is an important medical disorder affecting both patients' health and quality of life, it requires prompt and effective treatment. Newer systemic antifungal agents, such as terbinafine, itraconazole and fluconazole are more effective, but, even with these treatments, failure rates can be as high as 30~50%. Combinations of systemic and topical therapies have been shown to result in increased cure rates. The topical antifungal agents include amorolfine and ciclopirox. An *in vitro* study on the combinations of systemic and topical agents was applied to determine the degree of synergy. This study concluded that the combination of antifungal agents to produce synergistic activity is one possible advance towards achieving higher cure rates. The influence factors of treatment failure will also be analyzed through this presentation.

Key Words: Onychomycosis, Management, Antifungal therapy, Treatment failure



◆ CURRICULUM VITAE ◆

Name: Ruo Yu LI



❖ POSITION TITLE ❖

Professor and Chair, Department of Dermatology, Peking University First Hospital

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❖ EDUCATION / TRAINING ❖

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❖ RESEARCH AND PROFESSIONAL EXPERIENCE ❖

Professional Experience

1986. 8 ~ 1987. 11 Resident, Department of Dermatology, Peking University First Hospital

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Membership in Professional Societies

President, Society of Mycology, Chinese Society of Microbiology
President, Medical Mycology Society, Chinese Mycological Society
Member of Chinese Medical Association
Member and Director of Asia Pacific Society of Medical Mycology
Member of International Society for Human and Animal Mycology
Member of American Society of Microbiology

Activities:

Deputy editor in Chief

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Associate editor:

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Member of Editorial Board:

Chinese Medical Journal, Chinese Journal of Laboratory Medicine

Journal of Peking University (Health Sciences), Mycosystema,

Journal of Fungal Research, Chinese Journal of Clinical Pharmacology

Awards:

"Studies on the pathogenic fungi of chromomycosis" Awards of Science and Technology Advances, Ministry of Health, 1995.

"Excellent Middle and Young Age Doctor Awards", Chinese Medical Association-Janssen, 1998.

"Basic and Clinical Research on Antifungal Therapy" 2001, Beijing Municipal Awards of Science and Technology Advances.

"University Excellent Teacher Awards", Ministry of Education, 2002.

"Studies and Application on the Molecular Biology Features of Pathogenic Fungi" China Medical Science and Technology Awards, 2005

"Expression of virulence-related genes detected *Aspergillus fumigatus* in vitro and in vivo with competitive RT-PCR", the best paper in volume 160 of Mycopathologia Journal, 2006.

❖ RECENT PUBLICATIONS ❖

Papers: Over 200 papers were published in Chinese and English journals.

Books:

Textbook of Dermatology and Venerology, editor in chief. 2004.

Medical Mycology-Guide to Laboratory Examination, Deputy editor in Chief. 2005.



Session III-5

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SESSION IV

Chairpersons : Kee Chan MOON, Korea
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Diversity of Skin Lesions in *Penicilliosis marneffei*

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Penicillium marneffei is an emerging pathogenic fungus that can cause a life-threatening systemic mycosis in immunocompromised hosts, especially in the patients with AIDS. This infection is endemic in South-east Asian. With the prevalence of AIDS in these areas, the number of patients with systemic *Penicilliosis marneffei* is increasing rapidly. In Northern Thailand, this disease is the third most common opportunistic infection in HIV-positive patients. The occurrence of *Penicilliosis marneffei* in China is also increasing dramatically recently, especially in AIDS patients. In Hong Kong, about 10% of AIDS patients developed penicilliosis, about 2.4~8% in Taiwan, while about 16.67% during 2005~2007 in Guangdong (data not published). Though some cases reported sparsely in other area of China, most of these patients have the inhabitation history in Guangdong.

The patients with *Penicilliosis marneffei* usually present with fever, anemia, weight loss, skin lesions, generalized lymphadenopathy, and hepatomegaly. The clinical manifestations are not specific to *P. marneffei* infection and may closely resemble those of other HIV-related opportunistic infections by other pathogens such as *H. capsulatum*, *C. neoformans*, and *Pneumocystis carinii*. Diagnostic procedures have been based on the direct mycological examination of *Penicillium marneffei* from different laboratory specimens, while fungal culture is time-consuming. Skin lesions are present in approximately 60% to 70% cases of *P. marneffei* infection. The majority of characteristic skin lesions are umbilicated papules with or without central necrosis (molluscum contagiosum-like), but not diagnostic. Ulcers, nodules, macules, maculopapules and papules, pustules, acne-like lesions and folliculitis, vesicles on the oral mucosa sometime could be found in these patients. These skin lesions are mainly distributed on the upper half of the body such as the face, neck, upper extremities and trunk, sometimes on the lower limbs. The skin lesions may be located at one part of the body or be disturbed more diffusely if the *Penicilliosis marneffei* patients with AIDS. An important clue to making the diagnosis is a characteristic papular skin rash, often with central umbilication or necrosis, resembling molluscum contagiosum.

It is important, therefore, to have a high index of suspicion and to include penicilliosis in the list of differential diagnoses in HIV-infected patients who have lived in, or had a history of visiting the endemic areas, regardless of the length of time of exposure. Skin biopsy is relatively easy and minimally invasive, and it can be done even when the general status of the patient is severe. PCR identification method performed by skin lesions is also a rapid and accurate diagnosis of *P. marneffei* infection.

Key Words: *Penicilliosis marneffei*; Skin lesions



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Harbin Medical University bachelor (Clinical Medicine) and master degree
(Dermatology and Medical Mycology) in 1987

MD & PhD degrees at Institute of Dermatology, Chinese Academy of Medical Sciences,
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Research fellow: Dept. of Medical Mycology, Institute of Dermatology, Chinese Academy of Medical Sciences

Dept. of Dermatology, The 2nd Affiliated Hospital, Sun Yat-Sen University as a professor in 1998.

Research Center for Pathogenic Fungi and Microbial Toxicoses, Chiba University in

Japan as an lecturer and foreigner research fellow in 1995, 2002, 2003

Dept. of Pathology and Clinic Microbiology, Virginia University of USA in 2004

Centraalbureau voor Schimmelcultures (CBS), The Netherlands as a visiting scholar in 2007.

Awarded ISHAM Training Fellowship in 2002.

Authored 12 books on medical mycology in Chinese edition

❖ PRESENT POSITION ❖

Tutor of MD & Ph.D candidate and director of Dept. of Dermatology. The 2nd Affiliated Hospital, Sun Yat-Sen University.

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Reviewer of Mycopathologia

❖ INTERESTING FIELDS ❖

Pathogenesis of *P. marneffei*

Molecular diversity of *Fonsecaea* causing chromoblastomycosis in southern China

Projects supported by National Natural Science Foundation of China (NSFC) major

(1) "The relationship of fungal metabolite detection to rapid diagnosis of systemic mycoses".



- (2) "Pathogenic proteins identification of *Penicillium marneffei*".
- (3) Exploring the role of glyoxylate cycle in the pathogenesis of *penicillium marneffeib*.

◆ PUBLICATION (2007~2008) ◆

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2. Liu H, Xi L, Zhang J, et al. Identifying differentially expressed genes in the dimorphic fungus *Penicillium marneffei* by SSH. *FEMS Microbiol Lett* 2007; 270(1): 97-103.
3. Xi L, Li X, Zhang J, et al. Good response in a patient with deep-seated subcutaneous ulcer due to *Candida* species. *Mycopathologia* 2007; 164: 77-80.
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9. Junmin Zhang, Liyan Xi, Changming Lu, et al. Successful treatment for chromoblastomycosis caused by *F. monophora*: a report of three cases in Guangdong, China. *Mycose* 2008, Jun 21.
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Multilocus Microsatellite Typing for *Penicillium marneffei* Isolates from Bamboo Rats in China

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Objective

Penicillium marneffei is an emerging opportunistic dimorphic fungal pathogen that is endemic in several regions of southeast Asia. Infection by *P. marneffei* in HIV patients in Guangxi region, south part of China has been increasing sharply in recent years, to date this area has become the main endemic region of *Penicillium marneffei* infection in China. Bamboo rats have been suggested as the enzootic reservoir of *P. marneffei*, but the role of bamboo rats in the epidemiology of human infections due to *P. marneffei* is still unknown. The aim of our study was to survey the carrier rate of *P. marneffei* in adult *Rhizomys pruinosus* in Guangxi and illustrate genetic polymorphic of *P. marneffei* applied of a multilocus microsatellite typing (MLMT) system.

Methods

43 bamboo rats (*Rhizomys pruinosus*) were trapped from deferent sites of Guangxi, the internal organ of rats were minced and then inoculated on multiple slopes of Sabouraud dextrose agar (SDA), cultured at 25°C or brain heart infusion (BHI) agar at 37°C to isolated *P. marneffei* strains. When the strains isolated, DNA was extracted by benzyl chloride method. Multilocus genotypes for each isolate were then generated by scoring polymorphisms at 8 microsatellite-containing loci by the protocol described previously.

Results

(1) Study shown all of the 43 bamboo rats (*Rhizomys pruinosus*) captured in Guangxi could isolat *P. marneffei* strains.
(2) Polymorphic microsatellite marker (PMM) analysis detected a total of 19 different allelic types for 43 isolates of *P. marneffei* with a high discriminatory power ($D=0.962$). All bamboo rats were infected with a single genotype within sample sites, a few genotypes were shared between sample sites, some genotypes were identical to that seen in human isolates.



Conclusion

There was high MLMT gene polymorphism of *P. marneffei* in Guangxi isolated from bamboo rat (*Rhizomys pruinosus*). The identical genotypes share between isolates from bamboo rats or from clinical patients suggesting that either coinfection from a common source or host-to-host transmission had occurred.

Key Words: *Penicillium marneffei*, Bamboo rats, Microsatellite, Genetic diversity, Genotyping



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❖ GRANT ❖

Guangxi natural science fund

❖ MAJOR INTEREST ❖

Medical Mycology, Molecular research on *Penicillium marneffei*, Therapy and Diagnosis, Clinical Dermatology

❖ PUBLICATIONS ❖

2007, Cunwei Cao, Wei Liu, Ruoyu Li, et al. The effects of temperature, pH, and salinity on the growth and dimorphism of *Penicillium marneffei*. Medical Mycology. 2007. 45(5): 401. (English)
 2007, Cunwei Cao, Wei Liu, Ruoyu Li, et al. RACE combined with degeneration PCR: Clone a novel gene in *Penicillium marneffei*. Chin J Dermatovenereology. 2007. 30(11): 17.



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Difficult Mycoses: Treatment Options

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Amongst over 100,000 dermatology patients who annually visited the Institute of Dermatology, Bangkok, fungal infection comprises one of the most common dermatology problems, ranking third after eczema and acne vulgaris. By far, pityriasis versicolor is the most common superficial mycosis with an average 5-year annual prevalence of approximately 3%. Tinea corporis and tinea cruris are the most common dermatophytoses with average prevalence of 1.55% and 0.92%, respectively, followed by tinea pedis and tinea unguium. Infection of the hands and feet comprise 1.53% prevalence among new cases. Scalp infections are predominantly seen in children with an average of 60 new cases per year. *Candida* infection of the oral mucosa is rare except in HIV patients while the prevalence in other skin and nail is about 0.72%.

Trichophyton rubrum is the most common pathogen for dermatophytic infection of glabrous skin and nails while *Microsporum canis* is the most common cause of tinea capitis with exception of *M. ferrugineum* which is the common cause of epidemic in orphanage homes. The term "tinea" specifically refers to fungal infections by which dermatophytes are the causative agent. Recently, infections by nondermatophyte species are becoming more common. In Thailand, *Scytalidium dimidiatum* and *Fusarium* spp. are the causes of approximately 50% of foot and toenail infections. A proposed terminology, such as *non dermatophytic* may be added as a prefix to specify such infections. Various treatment have been reported with unpredictable prognosis.

Subcutaneous mycosis is still a rare disease. Only 21 cases of *Fonsecaea pedrosoi* chromoblastomycosis, 8 cases of eumycotic mycetoma and 3 cases of phaeohyphomycosis by *Exophiala* spp. have been reported in the last 9 years. Systemic itraconazole or terbinafine are the drug options, however, combined treatment with surgery or cryotherapy may hasten clinical improvement.

Amongst the mentioned problems, onychomycosis, chromoblastomycosis and eumycotic mycetoma are the most difficult-to-treat mycoses in terms of costs, duration and prognosis. Medical management requires systemic oral antifungal, laboratory procedures to assess disease progression and long follow-up periods. Recurrence is another important issue for consideration.



♦ CURRICULUM VITAE ♦

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❖ EDUCATION ❖

1983 Bachelor's of Science (2nd Honours, Pure chemistry),
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❖ PUBLICATION ❖

1. Kullavanijaya P, Ungpakorn R, Reangchainam S. The problem in tinea capitis in a home for mentally-handicapped children. Pierini, *et al.* ed. In: Pediatric Dermatology. 1995 Elsevier Science B.V.
2. Ungpakorn R, Holdom MD, Hamilton AJ, Hay RJ. Purification and partial characterization of the Cu, Zn superoxide dismutase from the dermatophytes *Trichophyton mentagrophytes* var. *interdigitale*. Clin Exp Dermatol 1996; 21: 190-196.
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4. Ungpakorn R. *Penicillium marneffei*: a new threat. Dermatologic Therapy 1997; 3: 97-103.
5. Ungpakorn R. Cutaneous manifestations of *Penicillium marneffei* infection. Current Opinion in Infectious Diseases 2000; 13: 129-134.
6. Ungpakorn R, Lohapraphan S, Reangchainam S. Prevalence of foot diseases in outpatients attending the Institute of Dermatology, Bangkok, Thailand. Clin Exp Dermatol 2004; 29: 87-90.
7. Ungpakorn R, Ayutyanont T, Reangchainam S, Supanya S. Treatment of *Microsporum* spp. tinea capitis with pulsed oral terbinafine. Clin Exp Dermatol 2004; 29: 1-4.
8. CLINICAL CAMEO: Tinea imbricata-like dermatosis in an HIV-positive patient: an unusual presentation of secondary syphilis. Br J Dermatol 2005.
9. Ungpakorn R, Reangchainam S. Pulse itraconazole 400 mg daily in the treatment of chromoblastomycosis. Clin Exp Dermatol 2006; 31(2): 245-7.
10. Ungpakorn R, Ayutyanont T, Reangchainam S, Supanya S. Randomised, double-blind, comparative study in treatment of *Microsporum* spp. tinea capitis with pulsed oral terbinafine and griseofulvin. Clin Exp Dermatol 2005.
11. Ungpakorn R. Mycoses in Thailand: Current Concerns. Nippon Ishinkin Gakkai Zasshi 2005; 46: 81-86.



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SESSION V

Chairpersons : Hee Joon YU, Korea
Kyu Joong AHN, Korea



Preferred Oral Antifungal Treatment in Toenail Onychomycosis Patients

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The objective of the present study was to identify a satisfied treatment options for toenail onychomycosis patients. This study was undertaken on 190 patients who were treated toenail onychomycosis among patients who visited Hanyang University Guri hospital, Konkuk University hospital and Asan Medical center during the period between March 2008 to April 2008. We evaluated previous treatment methods, discomfort of the treatment and preferred oral antifungal treatment.

1. The motives for treatment of toenail onychomycosis were 'ugly appearance' (39.8%) and 'pruritus' (33.9%).
2. Continuous therapy was the most common method (47%) in previous treatment methods. Pulse therapy (26%) and week pulse therapy (18%) follow the continuous therapy. Continuous therapy was the most common treatment option irrespective of age, disease duration and gender.
3. The most preferred treatment options was also continuous therapy (57%). Pulse therapy (25%), week pulse therapy (19%) follow the continuous therapy. And the 69% of patients who were received continuous therapy preferred the same therapy, but it was only 48% and 38% in pulse therapy group and week pulse therapy group.
4. 66% of the toenail onychomycosis patients had associated disease. In this study group, 33% of third decades, 54% of fourth to fifth decades, 72% of sixth to seventh decades, and 87% of over eighth decades were being treated for associated disease.

As mentioned above, continuous therapy was the most convenient method in toenail onychomycosis patients who visited general hospital. And according to high morbidity of other disease, continuous therapy of antifungal agent that has minimal drug interaction may be beneficial in treatment of toenail onychomycosis.



A Experience of Survey on Tinea Pedis and Onychomycosis in the Old Healthy People Attending a Local Festival

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Recently, the prevalence of tinea pedis and onychomycosis is rapidly increasing. Although there have been many reports about high prevalence rate of tinea pedis or onychomycosis in elderly people, most research targeted on hospitalized people and just a few on general population.

We report the result of our research on tinea pedis and onychomycosis in the old healthy people attending a local festival in order to evaluate the availability of KOH examination and fungal culture on a large population for a short period.

In this study, we examined 74 of elderly people above fifty among healthy-looking people who attended a local festival in Daegu on the second of May 2008. They all seem to have tinea pedis or onychomycosis. The mean age was 62.3 years and the ratio of male to female was 29 to 45. Among the people suspected of tinea pedis, positivity of KOH examination was 78.2% and fungal culture, 16.2%. On the people suspected of onychomycosis, positivity of KOH was 60.8% and fungal culture, 13.7%. Clinical types of the tinea pedis were hyperkeratotic (41.8%), interdigital (34.6%), interdigital-hyperkeratotic (27.3%). However, all of the people with onychomycosis represented a distal lateral subungual type on the great toe nail. Fifty four point one percent of the people with tinea pedis or onychomycosis had other systemic diseases, which consisted of 24.3% of hypertension, 13.5% of diabetes mellitus and 9.5% of others. Duration of the people having tinea pedis was less than 5 years, while onychomycosis over than 5 years. Thirty five percent of the people with tinea pedis or onychomycosis experienced antifungal treatment.

We concluded that KOH examination showed high sensitivity, while sensitivity of fungal culture was very low. In addition, it is needed a careful scheme and a concrete questionnaire for a group survey.



White Superficial Onychomycosis in a 6-Year-Old Boy Caused by *Trichophyton rubrum*

**Kyung-Jin Lee, Koang-Hyun Choi, Eun Lee, Hyun-Jung Park
Jun-Young Lee and Baik-Kee Cho**

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White superficial onychomycosis (WSO) is defined as fungal infection of the nail plate from dorsal surface of the nail plate. In some English literatures, prevalence of WSO in the general population is about 1% to 2%, and the most common causative organism of WSO in adults is *Trichophyton mentagrophytes* except AIDS patients. On the other side, the prevalence in children is 0.3%, and *Trichophyton rubrum* infection in childhood WSO is more common than in adults.

A 6-year-old boy with underlying cerebral palsy presented with whitish patches on his toe nails 4 years ago, but he didn't take any treatment for his toe nails. He had spastic tetraplegia and epilepsy, receiving lamotrigine, and had admitted eight times for systemic infections, such as pneumonia and pharyngitis. Potassium hydroxide (KOH) examination, fungus culture and slide culture was done. After all, *Trichophyton rubrum* was revealed as a causative organism. The patient was treated with nail lacquer amorolfine only. His nails showed improvement for a treatment for two months.

Herein we report a rare case of childhood WSO caused by *Trichophyton rubrum*.



Proximal Subungual Onychomycosis in a Kaposi Sarcoma Patient Caused by *Trichophyton rubrum*

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Proximal subungual onychomycosis (PSO) is the rarest form of onychomycosis. In general, pathogenic fungus invades the nail plate from proximal nail fold and spreads distally in PSO. PSO is common in the immunosuppressive patients, such as AIDS or organ transplant patients. Alteras I. et al. reported that *Trichophyton rubrum* was the most common causative organism of tinea pedis or tinea unguium in Kaposi sarcoma patients in 1981.

A 58-year-old man with Kaposi sarcoma presented with whitish patches of nails for 4 weeks. On his finger and toe nails, there were transverse whitish patches near the proximal nail folds. He had diagnosed as Kaposi sarcoma 3 weeks before the visit. On the serologic examination, he was negative for HIV. We performed potassium hydroxide (KOH) examination and fungus culture from the white patches of the nails. From the fungus culture, *T. rubrum* was isolated. Thus, itraconazole pulse therapy was started.

Herein, we report a rare case of disseminated PSO in a classic Kaposi sarcoma patient.



Clinical and Mycological Study of Tinea Capitis Presented in Adults Living in Daegu

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Tinea capitis frequently presents in young children and it is known as a rare disease in adults. However, as steroid abuse or misuse, diabetes, immunosuppressants treatments and frequent contacting with pets, the Tinea capitis in adults are also on the increase. Hence, we have concluded at the results below, after we surveyed for 18 years with the patients who visited Catholic Dermatology Clinic, Bukgu, Daegu, Korea from Jan. 1990 to Dec. 2007, who were diagnosed as Tinea capitis according to clinical findings, KOH and Sabouraud dextrose agar culture. The clinical and mycological features of Tinea capitis were suggested among the 136 patients who were at least 20 years old.

1. Among 994 patients of Tinea capitis, the adults accounted for 13.7% which was corresponding to 136 patients.
2. In the incidence of Tinea capitis, seasonal variations existed; summer was on the priority accounting for 36.8%, spring for 30.1%, winter for 22.8% and fall for 10.3% in order.
3. The Tinea capitis presented differently according to age groups showing 42 cases (30.9%) in sixties, 29 cases (21.3%) in seventies, 21 cases (1.4%) in fifties, 13 cases (9.6%) in thirties and forties, 9 cases (6.6%) in eighties, 7 cases (5.1%) in twenties and 2 cases (1.5%) in nineties successively. The sexual ratio was 1:3 that was 35 men and 101 women.
4. KOH showed 86.0% positivity that consisted of 117 positive cases and 19 negative cases.
5. The fungi were isolated in 92 cases (72.8%) among all 136 patients of adult onset Tinea capitis. *Microsporum (M.) canis* ranked first which was isolated in 53 cases (57.6%), *Trichophyton (T.) rubrum* in 28cases (30.4%), *T. tonsurans* in 4 cases (4.3%), *T. mentagrophyte* in 3 cases (3.3%) and *T. verrucosum* and yeast in 2 cases (2.2%) respectively.



A Case of Chronic Tinea Capitis Who Showed Resistance to Various Antifungal Agents

Min Jung Lee, Jong Hoon Won, Dong Nyeok Hyun, Joon Soo Park and Hyun Chung

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Tinea capitis is a superficial mycosis of the scalp and hair which commonly presents in young children. The most common pathogen is *Microsporum (M.) canis* and *M. ferrugineum*, *M. gypseum*, *Trichophyton (T.) violaceum*, *T. verrucosum* and *T. tonsurans* are also regarded as other pathogens. Recently, the complete remission is increasing due to better hygiene and availability of various antifungal agents. However, drug resistance, immune system disorder and other systemic disease of hosts can make resistance to treatment by making drug absorption or metabolic system dysfunction. We report a rare case of chronic Tinea capitis which showed wax and wane for 2 years since 3 weeks after birth.

The patient is two years old female child and she was consulted from Dept of Pediatrics presenting 3.0×3.0 cm sized, scaly annular erythematous patch on the scalp when she was 6 weeks after birth. The lesion initially developed when she was three weeks after birth and then it has spreaded around and increased in size gradually. The family history showed that her father has had a history of Tinea faciale before the child was born. The KOH was positive and *M. canis* was isolated on Sabouraud dextrose agar culture. When she was six weeks after birth, sertaconazole nitrate (Dermofix^R) was applied locally twice a day for two weeks, however, her revisit showed that the lesion was not improved. The KOH smear showed spore and hyphae and skin biopsy confirmed spores in scalp. According to these findings, oral administration of griseofulvin 10 mg/kg/day was initiated and the lesion notably improved. However, the lesion relapsed as scaly erythema with positive response to KOH about two months later since medication so oral itraconazole 20 mg was tried. The lesion improved slightly, however, it relapsed two months later and oral terbinafine 62.5 mg was prescribed. Since then, the lesion seemed to get better apparently, however, positive and negative response to KOH was repeated until she was 20 months old. When she was 20 months old, she showed negative result. On the culture, she showed positive or negative response until she was 24 months old. She is being followed up closely for 5 months since she showed negative response which was at the age of two.



A Case of Kerion Celsi Caused by *Trichophyton tonsurans* in Female Wrestler

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Trichophyton(T.) tonsurans is an anthropophilic endothrix dermatophyte and has been the main causative organism of tinea capitis in the United States, Canada, Mexico, and other Latin American countries. In Korea, tinea capitis caused by *T. tonsurans* has reported since 1995, but kerion celsi with *T. tonsurans* is much less common.

A 17-year-old Korean woman presented with 1-year history of erythematous erosive tender patches and pustules on the occipital area of scalp. Despite of local managements, the inflammatory lesions with hair loss were extended the surrounding areas. The fungal culture from the lesions on Sabouraud dextrose revealed several white powderly colonies with reddish brown reverse side at 25 °C for 2 weeks. The microscopic examination of colonies showed tear-drop or match-head shaped microconidia attached to mycelium. Histopathologically, endothrix spores and perifollicular lymphohistiocytic infiltration are observed in vertical section. Therefore we confirmed *T. tonsurans* based on the mycologic investigations and treated by oral terbinafine and prednisolone combination therapy.



A Case of Papules Caused by *Trichophyton rubrum* on the Scrotum

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Dermatophytes usually do not penetrate beyond the epidermis. However, factors such as trauma and immunocompromised state are involved in the penetration of the fungi into the dermis. The most common organism is *Trichophyton rubrum*. However, other dermatophytes including *T. verrucosum*, *T. violaceum*, *T. mentagrophytes*, *T. tonsurans*, *Microsporum canis* have been reported as causative agents.

We report a case of papules of the scrotum caused by *T. rubrum* in a 35-year-old male, who showed pruritic, erythematous papules on the scrotum for 1 month. KOH examinations revealed negative result. However, histopathologic examinations of the skin lesion showed dermal inflammatory infiltration consisting of neutrophils, eosinophils, and histiocytes around hair follicle and the PAS staining was positive to the fungal element in the hair follicle. The culture of biopsy specimen on Sabouraud's dextrose agar showed growth of *T. rubrum*. Skin lesions resolved with administration of itraconazole for 4 weeks.



A Case of *Trychophyton mentagrophytes* var. *erinacei* Infection from the Patient's Pet Hedgehog

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Hedgehogs are nocturnal spiny mammals in a rodent family. Recently in Korea, the more hedgehogs are raised in the house as pets, the more people are acquired various infections from them. Herein, we report a case of *Trichophyton* (*T.*) *mentagrophytes* var. *erinacei* infection transmitted from the patient's pet hedgehog. The patient was a 37-year-old man who raised a hedgehog for 6 months. He presented with scaly, erythematous patches and papules on the left hand and right elbow for 3 months. Potassium hydroxide (KOH) examination, fungus culture and PCR of rDNA ITS showed *T. mentagrophytes* var. *erinacei*. Treatment was performed systemically with antifungal agents and skin lesions were improved without recurrence.

Up to date, there have been only three case reports of *T. mentagrophytes* var. *erinacei* infection transmitted from pet hedgehogs in the English literature. Here we report a rare and interesting case.



Tinea Manus Caused by *Trychophyton mentagrophytes* var. *erinacei* from the Hedgehog

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The hedgehog has recently become a fashionable pet in South Korea, especially among the young age groups. People who breed hedgehog as a pet usually touch them with their naked hands and are stung or bitten by the hedgehog frequently. Hedgehog has been rarely reported to be a carrier of fungus that can cause human dermatomycosis. We report herein a 12-year-old boy who developed two clearly defined erythematous plaques with some pustules after being bitten on the fingers by his hedgehog 1 week ago. Periodic acid-Schiff stain of the specimen from the punch biopsy showed long septated fungal hyphae in the keratin layer. Potassium hydroxide examination and fungus culture showed *Trichophyton mentagrophytes* and was identified as the subtype *Trychophyton mentagrophytes* var. *erinacei* by sequence analysis of the ribosomal DNA of the fungus by polymerase chain reaction method. Treatment was performed with oral itraconazole (3.3 mg/kg, twice a day for 4 weeks) and topical ketoconazole cream with KMnO₄ wet dressing twice a day, resulting in complete resolution of skin lesions.

Key Words: Hedgehog, Tinea manus, *Trichophyton mentagrophytes* var. *erinacei*



A Subcutaneous Candidal Abscess in the Patient with Iatrogenic Cushing Syndrome

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Invasive candidiasis occurs under certain circumstances such as immunosuppression, prolonged hospitalization, and previous antibiotics use. The genus *Candida* is a heterogenous group of approximately 200 yeast species. They were seen as typical budding yeasts with hyphae or pseudohyphae. *Candida albicans* is a dimorphic yeast which is responsible for 70 percent to 80 percent of all candidal infection, and is the most common cause of superficial and systemic candidiasis.

A 54 years woman came to our clinic with painful erythematous swelling plaques and nodules on the face and arms with a month of duration. The patient had taken herbal medication for health during approximately 1 year, and hypertension and diabetes mellitus were detected. She was hospitalized with generalized edema and weakness of both leg, and finally diagnosed with iatrogenic Cushing syndrome in department of the endocrinology. Biopsy of the lesion revealed chronic inflammation in dermis and subcutis. And budding yeasts with pseudohyphae were shown in Gomori's Methenamine silver stain. The *Candida albicans* was isolated in culture of subcutaneous abscess and the infection was confirmed with Polymerase Chain Reaction.

The patient was improved with fluconazole 100 mg/day for 2 weeks and itraconazole 200 mg/day for 3 weeks. But it recurred after cease of the drug, so itraconazole 200 mg/day were given continuously. This case is clinically very rare and interesting in that it manifested only multiple cutaneous lesions caused by iatrogenic Cushing syndrome without any other symptoms of systemic candidiasis.



The Biological Investigation on the Distribution of *Malassezia* Yeasts on Atopic Dermatitis Patients

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Malassezia yeasts, since first reported in 1889, are known to be implicated in various diseases, including pityriasis versicolor, seborrheic dermatitis and *Malassezia* folliculitis. Recently, there have been a growing number of reports which show the implication of *Malassezia* yeasts in atopic dermatitis, acne vulgaris. To investigate the relationship of *Malassezia* yeasts with other diseases, many researches on the distribution of *Malassezia* yeasts are conducted. But, in our country, the research on the distribution differences of *Malassezia* yeasts and quantitative feature of that in the normal or abnormal skin is not sufficient.

So, in this study, to overcome the limit of the pre-existing classical methods and more precise identification *Malassezia* yeasts, we use the novel molecular biological technique, 26S rDNA PCR-RFLP. We distribute the yeasts from atopic dermatitis patients to achieve the fundamental databases proving the relationship of *Malassezia* yeasts with diseases. And we also identify the yeasts from atopic dermatitis patients, then, on this basis, we analyse the differences of body areas, age groups with the normal control groups.



A Case of Tinea Corporis Caused by *Microsporum gypseum* and Keloid While Treating Tinea Corporis with Glacial Acetic Acid

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We report a case of tinea corporis caused by *Microsporum(M.) gypseum* and keloid while treating tinea corporis with glacial acetic acid in a 59 year-old female. The lesions were manifested by 7.0×4.5 cm-sized, localized pruritic fine scaly erythematous annular patch and keloid on left antecubital fossa. Culture from the annular skin lesion of patient on Sabouraud's dextrose agar showed typical colony of *M. gypseum*. The patient was treated with 250 mg of terbinafine daily for 1 month and topical itraconazole application. Keloid was improved by intralesional steroid injection.



A Case of Localized Skin Infection Due to *Scedosporium apiospermum*

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Scedosporium(S.) apiospermum is the asexual stage of *Pseudallescheria boydii*. It has been isolated from soil, plant debris, polluted water and sewage. It is an opportunistic organism with low virulence. Infection may occur via direct inoculation. This ubiquitous fungus cause not only mycetoma but also infections of a variety of body sites including the skin. Localized skin infection without granule or grain production due to this organism is much rarer than mycetoma. We report a cases of cutaneous *S. apiospermum* infection which occurred in a 69-year-old woman. The lesion was manifested by 5.0×4.0 cm-sized, scaly erythematous plaque on the dorsum of right hand. The fungal culture from biopsy specimen on Sabouraud's dextrose agar showed white to gray colored floccose colonies of *S. apiospermum*. The patients were treated with 200 mg of itraconazole daily for 3 months. Skin lesions were completely cured and recurrence is not observed to date.



A Case of Chromoblastomycosis Caused by *Fonsecaea pedrosoi*

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Chromoblastomycosis is a chronic subcutaneous mycotic infection caused by dematiaceous fungi that produce brown-walled, round, nonbudding fungal forms (sclerotic cells) in tissues.

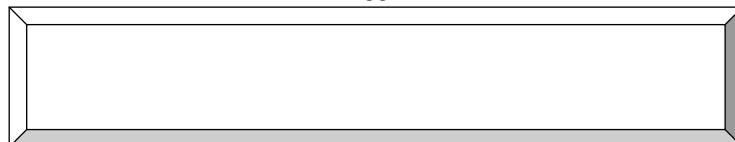
We report a case of chromoblastomycosis caused by *Fonsecaea(F.) pedrosoi* in 39-year-old male, a foreign worker from Thailand. He showed scaly erythematous plaques with ulcers on the left shin for 1 year. Histopathologically, chronic granulomatous inflammation and sclerotic cells were observed. Fungal culture grew out the typical black colonies of *F. pedrosoi*. The patient had been treated with itraconazole for 3 months.



MeMo



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