

抄 録

1 他誌掲載論文

Sughiratake Mushroom (Angel's Wing Mushroom)- Induced Cryptogenic Encephalopathy may Involve Vitamin D Analogues

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In autumn 2004, many Japanese patients with renal failure developed cryptogenic encephalopathy by consuming sughiratake mushroom, a Japanese delicacy. To elucidate the relationship between the cryptogenic cases and this mushroom, we conducted a multivariate analysis of metabolites in 'Probably Toxic' sughiratake collected from the area of encephalopathy outbreaks, and 'Probably Safe' sughiratake collected from unaffected areas using UPLC/TOF MS. The results indicate that the presence of milligram quantities of vitamin D-like compounds per 10 g of dried sughiratake from the areas of encephalopathy outbreaks. Two hypotheses to induce the encephalopathy are proposed: the found metabolites are (1) vitamin D agonists, which induce acute and severe hypercalcemia and/or hyperammonemia and/or vitamin D toxicity, or (2) vitamin D antagonists, which induce acute and severe hypocalcemia.

Clinical features of influenza C virus infection in children

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BACKGROUND : Seroepidemiological studies have revealed that influenza C virus is widely distributed globally. However, because the isolation of this virus is difficult, there have been few reports on its clinical features. **METHODS:** Between December 1990 and November 2004, 84,946 respiratory-tract specimens were obtained from patients \leq 15 years old. On the basis of the results of isolation of virus, we examined the clinical data on children infected with influenza C virus. **RESULTS:** Of 170 children infected with influenza C virus, 157 (92.4%) were < 6 years old. Fever (frequency, 90.0%), cough (frequency, 74.1%), and rhinorrhea (frequency, 61.8%) were the most frequent symptoms. The mean duration of fever was 2.88 days (standard deviation, 1.66 days). Of the 170 children, 29 were hospitalized, and 21 (72.4%) of these 29 had lower-respiratory-tract illness such as pneumonia, bronchitis, and bronchiolitis. The rate of hospital admission was significantly higher in children < 2 years old than in children 2-5 years old (30.4% vs. 11.9%; $P = .0043$). **CONCLUSIONS:** Influenza C virus is a significant cause of upper-respiratory-tract illness in children < 6 years old, and the risk of complications with lower-respiratory-tract illness is particularly high in children < 2 years old.

山形の風邪を考える —2004年のウイルス・肺炎マイコプラズマ分離結果をもとにして—

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2004年1月より12月までの急性気道感染症1,203名の咽頭ぬぐい液・鼻腔吸引液（ウイルス 検体 1, 178名・同時採取肺炎マイコプラズマ検体102名・肺炎マイコプラズマ単独検体25名）を用いてウイルスと肺炎マイコプラズマの分離を行った。その結果、インフルエンザ61株、パラインフルエンザ58株、RSウイルス48株、ヒトメタニューモウイルス21株、ライノウイルス8株、アデノウイルス52株、エンテロウイルス147株、肺炎マイコプラズマ18株が分離された。エンテロウイルス・アデノウイルス・肺炎マイコプラズマはインフルエンザシーズンにも分離されており注意が必要であった。口腔内所見や症状から病原体を鑑別することは困難であるが、季節性・流行状況などを総合的に判断することにより、ある程度の病原体の推測は可能であった。

A Slow Spread of Adenovirus Type 7 Infection after Its Re-Emergence in Yamagata, Japan, in 1995

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We have continued the epidemiological study on adenovirus type 7 (Ad7), which re-emerged in 1995 in Yamagata, Japan. Between 1999 and 2004, we isolated only four strains from 10,778 throat swab specimens among children with acute respiratory infections. A serological survey of 303 specimens revealed the antibody-positive rate against Ad7 to be 0-7.4% in children under 10 years of age in 2005, although it was 3.3-16.7% in 1997 and 0% in 1993. Our results suggest that a re-emergence does not always provoke a sudden major outbreak, even if the antibody-positive rate against Ad7 is low in the local community.

Prolonged norovirus shedding in infants \leq 6 months of age with gastroenteritis

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Pediatr. Infect. Dis.J. 26 : 46-49, 2007

BACKGROUND : Noroviruses (NV) are one of the leading causes of gastroenteritis in young children; however, the duration of NV shedding in young children is not well known. **METHODS:** Fecal specimens were collected from children with acute gastroenteritis at a pediatric clinic during the period from November to December 2002 and tested for NV by reverse transcription-polymerase chain reaction. **RESULTS:** Of 71 children infected with NV, 60 (84.5%) were less than 3 years old. Among children aged <2 years and those aged 2 to 5 years, the duration of illness was longer (7 days versus 3.5 days, $P = 0.0069$), the maximum number of stools in a 24-hour period was greater (7 versus 3, $P = 0.0078$) and a 20-point severity score was higher (11 versus 8, $P = 0.0031$) in patients aged <2 years than in patients aged 2 to 5 years. Among the 23 children whose follow-up specimens were obtained, the median duration of NV shedding was 16 days (range, 5-47 days). Virus shedding for more than 2 weeks after onset was observed in 75% (6 of 8), 71.4% (5 of 7) and 25% (2 of 8) of children aged <1 year, 1 year and 2 to 3 years, respectively. Three infants aged \leq 6 months continued to excrete NV for an extremely long period (more than 42, 44 and 47 days from onset) after recovery. **CONCLUSION:** Long-term virus shedding after the disappearance of clinical symptoms was observed. Caution should be exercised when handling the excrement of infants and young children infected with NV.

A nationwide epidemic of influenza C virus in Japan in 2004

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During the period from January to July 2004, a total of 131 influenza C viruses were detected by cell culture or reverse transcription-PCR (RT-PCR) from specimens that were obtained from children with acute respiratory symptoms in 10 prefectures across Japan. Influenza C virus was identified most frequently in the Miyagi (1.4%, 45 of 3,226 specimens) and Yamagata (2.5%, 31 of 1,263 specimens) prefectures, and the frequency in this year was the highest since 1990. Phylogenetic analysis of the hemagglutinin esterase gene of the 13 strains isolated in nine prefectures revealed that genetically similar strains belonging to the Kanagawa/1/76-related lineage dominantly spread throughout Japan. During the 2004 influenza season, influenza C virus coexisted with epidemics of influenza A virus (H3 strain), and 12 cases were identified from patients who had been diagnosed with influenza-like illness (7 were detected by RT-PCR, and 5 were detected by culture). A comparison of specimens that were found positive by culture with those found positive only by RT-PCR shows that the amount of virus in PCR-positive specimens tended to be lower than in isolation-positive specimens. Although the mean peak temperature in patients in the PCR-positive group was slightly lower, there were no significant differences in characteristics between specimens (i.e., kind of specimen, period from onset to specimen collection, age distribution of patients, and severity of illness). These results suggest that an epidemic of influenza C virus occurred on a national scale during this period and that RT-PCR can be an effective supplemental tool for the evaluation of clinical and epidemiological information.

わが国のDOTSの成果と問題点

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WHOが推進するDOTS戦略は、2004年に世界の183か国で採用され、人口ベースのDOTS普及率は世界全体で83%（日本は71%）に達した。WHOは、2005年までにDOTS戦略のもとで感染性結核患者の70%以上を発見し、発見患者の85%を治すという目標を掲げている。このうち2004年のDOTS患者発見率は、世界全体で53%、日本は45%であった。2003年のコホート分析による治療成功率（治癒+治療完了）は、世界全体で82%、日本は76%であった。日本の成績が低い要因としては、コホート分析を用いた治療評価システムを適切に運用していない保健所の存在が目立った。日本の新登録結核患者の半数以上は高齢者であり、その多くが様々な合併症を有していることから、治療成功率の改善は今後も容易でないが、「DOTSで治せる段階」で患者を早期発見する方策の強化が望まれる。日本結核病学会は、結核制圧活動に対する政府（中央および地方行政）の積極的関与を強く求めていくべきである。政府は、厚生労働省が2003年に示した日本版DOTS戦略を成功させるための新たな公費負担制度（地域DOTSへの公費負担適用等）を構築すべきである。また、地方自治体は、結核治療評価システムの質を高め、かつ、地域DOTSに従事できる新たな人材を開発するために、保健所の機能を強化するべきである。

Relationship between Airborne Cry j 1 and the Onset Time of the Symptoms of Japanese Cedar Pollinosis Patients

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Background : Some patients with Japanese cedar (JC) pollinosis already show pollinosis symptoms before the first day of the pollen season as determined by microscopic pollen counts.

Methods : Airborne pollen allergen (Cry j 1) levels were measured by electron spin resonance radical immunoassay, a highly-sensitive method for Cry j 1 with a sensitivity 10-100-fold higher than conventional enzyme-linked immunosorbent assay. The symptom data from patients with JC pollinosis were collected from a mobile phone site, "pollen check sheet", and the onset times of the patients' symptoms were analyzed.

Results : The relationship between airborne Cry j 1 levels and the onset time of pollinosis symptoms was investigated. The symptoms of some patients began at the time airborne Cry j 1 levels fluctuated at 1 to 3 pg/m³ and symptom scores increased at the time of sudden increase in Cry j 1 levels. About 40% of patients began to show symptoms until the first day of the pollen season and the time nearly corresponds to the time of sudden increase in Cry j 1 levels.

Conclusions : Pollinosis symptoms of some patients began at the time airborne Cry j 1 levels fluctuated at 1 to 3 pg/m³ and symptom scores increased at the time of sudden increase in Cry j 1 levels. The latter time nearly corresponds to the first day of the pollen season.

Key Words : Cry j 1, electron spin resonance (ESR) radical immunoassay, Japanese cedar (JC) pollinosis, pollen information, symptom score

An algorithm and a device for counting airborne pollen automatically using laser optics

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Airborne pollen is important in relation to the social issues of pollinosis and of the environmental effects of genetically modified plants. Existing methods for pollen counting involve counting and classifying the grains that adhere to a sampling surface, requiring much time and skilled labor. We therefore have developed a method of automatically monitoring pollen, using a laser-optics instrument. In this instrument, the sideways and forward scattering of laser light by each particle is recorded in real time for computer processing. A field experiment was conducted in 2005, comparing our method with that of the older Hirst method. A scatter plot was made of the forward scattering vs. the sideways scattering for each particle. An algorithm was developed to find the optimum rectangular region of the plot for each type of pollen, and a count of points inside this region was taken as the count for that type of pollen. For the three most common types of pollen found in the field test (Urticaceae, Poaceae, and Ambrosia), the daily counts from this algorithm were compared with the daily counts from the Hirst-type (Burkard) sampler. There was a very high correlation (determination coefficient approximately 0.8) between the results of the two methods.

Key Words : Airborne pollen; Concentration; Automatic pollen monitoring; Semiconductor laser