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Intracellular development of genital Chlamydia organisms in culture cells was observed under phase contrast microscope and recorded by slow motion pictures, were five seconds in the film corresponded to one hour in real time. Owing to the photosensitivity of the chlamydia organisms, the growth cycle had to be recorded divided into three stages, to minimize the photodynamic effect.

The strain of *C. trachomatis*, G/85-1/CX (serotype D), was used as the test organisms and has been isolated in our laboratory from a patient with uterine cervicitis.

Susceptible culture cells, McCoy or HeLa-229, were prepared as monolayer cell sheets in the flattened glass vessels to which fresh nutrient fluid was supplemented with 10% inactivated fetal calf serum and 100 µg vancomycin and 1.5 µg cycloheximide per ml.

The unique developmental cycle of the chlamydia organism, including the initial conversion of the infecting elementary bodies (EB: 0.4 µm in diameter) to the vegetative reticulate bodies (RB: 1 to 1.5 µm) multiplication of the RB by binary fission, and final maturation process, was clearly recorded chronologically.

Under phase contrast microscope, no visible changes were observed in infected cells until 10 hours post inoculation. At times later than 15 hours, however, several small vesicles did appear near the Golgi' area which included single RB particles, respectively. They multiplied by fission with dividing time of about 1 to 1.5 hours in real time. The intracytoplasmic vesicles enlarged gradually accompanying an increase in number of the chlamydia organism. By 24 to 36 hours, the inclusion vesicles were fused each other, forming large single round vesicles in individual infected cells. The growth cycle completed by 48 hours, producing thousands of small EB particles per cell.

119. Effect of Herpes Simplex Virus Type 2 and Tumor Promoter on the Uterine Cervix

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The present study was undertaken to investigate

the oncogenic potential of herpes simplex virus type 2 (HSV-2) in the mouse cervix and effect of tetradecanoyl-phorbol-acetate (TPA) on the development of HSV-2 induced cervical lesion. Sterile cotton tampons saturated with ultraviolet-inactivated HSV-1, HSV-2, TPA, or control fluid (Vero cell extracts) were inserted into the vaginas of BALB/c mice twice a week. The first course treatment was given for 22 weeks, and the second course was given from 27 to 43 weeks. Mice were sacrificed at 48 weeks and the uterine cervixes were pathologically examined. In order of the performed treatments, HSV-2 plus HSV-2 induced dysplasia of the uterine cervix in one of 26 mice. HSV-2 plus TPA also induced dysplasia in one of 28 mice. No cervical lesion was induced by the following treatments: HSV-2 plus DMSO (0/26), HSV-1 plus HSV-1 (0/40), Vero cells plus Vero cells (0/21), Vero cells plus TPA (0/27). These results suggest that HSV-2 acts as at least an initiator in the multistep process of cervical carcinogenesis.

120. An Epidemiologic Study of Anti-ATLA Status of Pregnant Women in our District by Enzymeimmunoassay

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Kyushu and Okinawa are known as regions in which adult T-cell leukemia (ATL) is endemic.

In order to determine the distribution of antibody to ATL-associated antigen (anti-ATLA) in our district, sera from 1683 healthy pregnant women were tested for presence of anti-ATLA by Enzymeimmunoassay (EIA) prepared by Eisai Co. Ltd., Tokyo, Japan.

The results obtained are as follows:

1) Overall prevalence of anti-ATLA was 5.8% (97 of 1,683 individuals). The positive rate of anti-ATLA increased with age.

2) Anti-ATLA antibodies were positive in 7.0% of the multiparous women (73 of 1,044 subjects), whereas the positive rate was 3.0% in the primiparous women. Significant difference by the parity of women was recognized.

3) The positive rates of anti-ATLA in both the northern and the southern regions were higher than the average of 5.8% for the whole of our prefecture.

Exceptionally, one place in southern regions showed a high incidence (8.3%) of anti-ATLA-positive pregnant women.

121. Prevention of HTLV-I Transmission Through the Breast Milk by a Freeze-thawing Process

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Fifteen human breast milk samples obtained from mothers seropositive for human T-cell lymphotropic virus type-I (HTLV-I) antigen were kept frozen overnight at -20° . Each milk sample was then co-cultivated with cord lymphocytes obtained from 15 anti-HTLV-I antibody-negative mothers. No HTLV-I antigen-positive cells were detected among the cord lymphocytes subjected to co-cultivation. These results suggest that thawing of frozen breast milk may prevent HTLV-I transmission from mother to child via breast milk.

122. Study on the Mechanism of Fasting Therapy—Bodily Function

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In recent years fasting has been recognized as an effective therapy for cases of psychosomatic disorders. But the exact mechanism of fasting therapy is still obscure.

Methods: We used 28 cases of patients and one of authors. We used Kushima and Hasegawa's methods in the first half, and Suzuki's methods in the last half. During the fasting regimen, we performed routine examinations, LH-RH test, microvibration (MV), EEG power spectrum and measurement of the blood circulation and the metabolic activity of the brain.

Results: 1) The mean of weight loss was 4 kg. 2) Liver function abnormality and tachycardia were observed in first half. 3) Serum and urine acetone body value rose. 4) The response of LH-RH test was improved in effective cases. 5) Alfa wave of microvibrations increased after the 3rd day fasting. 6) The EEG spectral peak changed to slow waves with the progression of fasting. 7) Acetone body was the dominant fuel for brain metabolism during fasting and

glucose was dominant after fasting. 8) The amount of circulating blood in the brain decreased to 50% and the brain consumption of oxygen decreased to 65%.

Conclusion: It was thus speculated that the decreased function of the cerebral cortex may cause change in consciousness.

123. Heterochromatic Polymorphism in Couples with Repeated Abortion

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The role of heterochromatin is unclear yet, but some workers have considered variation in heterochromatin in chromosomes 1, 9, 16 and Y to be associated with recurrent abortion.

We made a comparative study of heterochromatin size in 33 couples with a history of recurrent abortion and 24 control couples with no abortion.

The size of heterochromatin of chromosome No. 1, 9, 16 and Y were calculated by Muller method.

The results indicated no significant difference in the heterochromatic regions between aborting and control couples but apparently control couples is larger than recurrent abortion.

The role of smaller heterochromatin of the recurrent abortion couples is still unclear and this may be clear in the future if the relation between the chromosome aberration and satellite association is pointed out.

124. Seasonal Variations of Birth Rates during the Period 1965~1983 in Japan

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It was commonly believed that birth rates exhibit seasonal variations. The purpose of this study is to quantify this phenomenon of seasonal variations in birth rate. The data source is the Vital Statistics 1965~1983 (Statistics and Information, Minister's Secretariat, Ministry of Health and Welfare, Japan). The monthly birth ratio was calculated as the average number of daily births per month/the average number of daily births per year; based on 34 million births in 46 prefectures except Okinawa during the