

5. THE ATTACK RATES OF THE PANDEMIC INFLUENZA INFECTION

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In Ulaanbaatar, the first case of the pandemic influenza infection has been reported on 12 October 2010. By November 9, a total of 929 cases laboratory-confirmed had been reported to National Center for Communicable Diseases (NCCD). Of these cases reported, 9 people died. The objectives of the study were to describe patients who admitted and hospitalized at NCCD and to determine overall attack rates among health workers, secondary attack rates among students of colleges and universities. Data was analyzed using Epi-Info2000. Among 929 of laboratory-confirmed cases, 50.3% (95% CI 43.0-57.5) were males aged 23 (± 14.9) in average with youngest – 7 months, oldest – 76 years old. Data analysis by districts among the hospitalized patients, showed 32.8% (139) of total cases in Bayanzurkh district including the first case of the pandemic influenza infection. The majority of patients who admitted and hospitalized to NCCD mostly experienced fever (288, 68.1%), dry cough (251, 59.3%), headache (203, 48.0%), sore throat (175, 41.6%). With 1020 physicians and health workers in total, 41.4% (422) of them work at NCCD, 35.4% (361) – at MCHRC. 11.1% of health workers out of total become ill with pandemic H1N1 2009 (overall attack rate 11.1%) with the most common symptom, 380C and higher fever (100.0%, 113), sore throat (83.2%, 94), cough (76.1%, 86) and runny nose (59.3%, 67). The higher attack rates of health workers by occupation were doctor (18.0%) and auxiliary (13%). The secondary attack rates among university students for influenza-like-illness (ILI) were 12.9%. These secondary attack rates were higher among students of art's college as compared with other universities (52.4%). For students, the main clinical symptoms were fever + sore throat (75.0%, 18), fever+ cough (70.8%, 17). In China, as of 27 September, 2009, from reported total 19981 cases infected with pandemic influenza, 61.0% were males, mean age was 17, mainly affected with 83% school students that consistent with our study result. The similar results on clinical symptoms were obtained in Russia. Out of 130 patients, 28.6% had 380C and higher fever, for 54.3% the body temperature reached 38.1-390C where as 17.1% - higher 390C and 96% had cough, 89% had muscle ache, 65% had headache, 14% had diarrhea.

6. SURVEILLANCE OF BIRD INFLUENZA IN THE MONGOLIA

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Surveillance of any infectious diseases is considered important for early diagnosis and identification of status of the diseases and for implementation of prevention measures. Surveillance among migratory and domestic birds in Mongolia has started in 2005-2006, after first diagnosis of HPAI in Mongolia. Major lakes and rivers, which are located on the main pathway of migratory birds are selected to be covered with the surveillance. The surveillance work was done by the support of technical cooperation projects sponsored by JICA, KOICA, OIE and World Bank as well. We have chosen 34 lakes, 3 rivers and 424 surveillance points from wet zones of Goby-Altai, Khovd, Bayn-Ulgii, Uvs, Zavkhan province (West zone), 15 lakes and 137 surveillance points were selected from Baynkhongor, Arkhangai, Bulgan, Khuvgul province (Central zone) and 45 lakes and 192 surveillance points were selected from east zone, where Dornot, Sukhbaatar, Khentii province are included. Totally, 94 lakes, 3 rivers and 753 surveillance points from 12 provinces. In the framework of 2007 surveillance, we have collected 360 samples, in year of 2008 we have collected 620 samples and in the 2009 collected 910 samples as well. Totally, we have collected 1890 samples from 127 lakes and 469 surveillance points. As a results of these investigations, we have detected 3 viruses on the 2007 and identified as H7N9, H7N7, H3N8, 6 virus on the 2008 and identified as H3N8, H3N1, H4N6, H3N8, H4N2, H10N6 and about 30 LPAI virus on the 2009 and identified as H2N2-(1), H3N2 (1), H5N8 (35), H4N3 (1), H4N8 (3), H7N7 (2), H10N3 (10).

7. MAJOR EQUINE RESPIRATORY VIRAL INFECTIONS: INFLUENZA AND EQUINE HERPESVIRUS-1

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Equine influenza virus and equine herpesviruses are

likely the most common viral respiratory pathogens of horses worldwide. Both agents are highly contagious, enzootic in most countries with large horse populations, and in the absence of laboratory diagnostic testing these diseases can be mistaken for each other. Where the equine influenza is enzootic, outbreaks tend to be small in scale due to herd immunity and widespread vaccination, but where the disease has been absent for a period the introduction of virus can trigger explosive large-scale outbreaks as occurred in Australia in 2007. Equine influenza A viruses of two subtypes, H7N7 and H3N8, have been known, but the H7N7 subtype is thought to be extinct in horses and the OIE has recommended its removal from vaccines. Hence reports of its circulation in the period since 1980, as in Mongolia, require careful investigation. The equine H7N7 subtype has similarities to high-pathogenicity to avian influenza; but the equine H3N8 subtype has been more important in the global ecology of influenza as it has shown the capability for interspecies transmission to canines and swine, and possibly also humans. Vaccines for equine H3N8 influenza exist in various forms but primarily target the viral hemagglutinin protein, and are usually effective in the near term. However a stable protective immunity is not achieved due to both relatively short duration of protective antibody titers especially in young horses, and antigenic drift of the viruses in circulation. The OIE has in place a mechanism for monitoring antigenic drift, based on the WHO system for monitoring human influenza viruses. The pace of vaccine updating has improved since the system began, but remains problematic. Nonetheless, equine influenza is a comparatively simple problem compared to equine herpesvirus type 1 (EHV-1). This and the closely related type 4 virus (EHV-4), both of the alphaherpesvirus family, are the causative agents of a constellation of disease entities collectively termed equine rhinopneumonitis, including most importantly flu-like respiratory disease, fetal abortion in pregnant mares, peri-natal foal death, or potentially lethal myeloencephalopathy in adult horses. The viruses are ubiquitous in horse populations owing to their ability to establish latent infections in young animals. Furthermore, vaccination of horses for equine herpesviruses has not been particularly successful at preventing disease, although in Kentucky it has reduced the incidence of abortions. Both humoral and cell-mediated immunity appear to be needed, and the precise viral targets that induce protective immunity have not been established. Antiviral therapy using acyclovir derivatives can be effective and is now increasingly likely to be applied to cases of the neuropathogenic form of EHV-1 disease.

8. CURRENT SITUATION AND TENDENCY OF HUMAN BRUCELLOSIS IN MONGOLIA

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Due to high incidence and illness of animal brucellosis and lack of coordination between human and veterinary health services, prevalence of human brucellosis is not decreasing in the country.

In the last 5 years, 2499 incidences have been registered and as of 2009, rate of disease is 1.1 per 10000 populations with 302 incidences. Human brucellosis takes up 2.1% of all infectious diseases in Mongolia.

Among 7 types of brucella that causes disease in human, Br.Melitensis (J.Gantsetseg, 2005) has high pathogenicity and Br.Abortus of big animals (J.Zandraa 2009) has patchy picture in causing the illness in humans. In 76.0% of cases, these bacteria transmitted to human through contact, transmission through digestive tract occurred in 13.5% and 11.5% of cases infection was transmitted through other routes. Seasonality of human brucellosis showed increase of the cases in May through July and Oct through

Dec, which corresponds to the period of animal parturition and 60% of illnesses was registered during animal parturition.

As for the socio-demographic characteristics of cases, 77.5% were herders, agriculture workers and their children, 66% were females and 86% were cases of age of 15-55.

Zoonotic disease department of the NCCD screened 22000 people in the last 3 years, carried out measures to contain and control risk areas (foci) in Kherlen soum, Khentii aimag and Kharkhorin soum, Uvurkhangai aimag and Tariat soum of Arkhangai aimag. During the same period, 1119 incident cases were registered, from which 321 (32.4%) cases were diagnosed at the Brucellosis room, NCCD.

The study among risky 15 health organizations showed 10% of 1124 health workers was infected with brucellosis in the last 2 years. Human brucellosis prevalence study among veterinarians for the same period showed that 43% of over 400 veterinarians were infected.

The patients treated at the NCCD in the last 10 years, 17.2% were diagnosed with acute, 16.7% with sub-acute and 66.1% with chronic brucellosis relatively. Taking into consideration that most of the cases di-

H5N1 дэд хэв шинжийн 10 гаруй үүсгэгч гарган авч оношийг эрх бүхий байгууллагаар батлагаажуулав.

Дүгнэлт:

- Монгол улсад шувууны томуу өвчний тандан шинжилгээ явуулах нуур, голын сонголт буй болж, тандалт явуулах байхшилыг тогтоож, сүлжээ байгуулагдав.

- Тус улсад нүүдэллэн ирж буй нүүдлийн шувууд нь томуугийн үүсгэгчийг тээж ирдэг болох нь тогтоогдов.

- Шувууны томуу өвчнөөс урьдчилан сэргийлэх, тэмцэх арга хэмжээг оновчтой зохион байгуулахад дээрхи тандалтын сүлжээ чухал ач холбогдолтой бөгөөд цаашид уг тандалтыг явуулж байх хөрөнгийн эх үүсвэр шаардлагатай байгаад анхаарах нь чухал болж байна.

7. АДУУНЫ АМЬСГАЛЫН ЗАМЫН ВИРҮСИЙН ТОМООХОН ХАЛДВАРУУД: АДУУНЫ ТОМУУ БОЛОН АДУУНЫ ХЕРПЕСВИРУС-1

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Адууны томуугийн вирус болон адууны херпесвирус нь дэлхий дахинаа элбэг тохиолддог адууны амьсгалын замын эмгэг төрүүлэгчид юм. Энэ хоёр вирус нь адуу ихтэй улс орнуудад нутагшин тархсан, халдварлалт өндөртэй бөгөөд лабораторийн аргаар оношлох боломжгүй тохиолдолд тэдгээрийг ялган оношлох боломжгүй байдаг. Адууны томуугийн вирус нутагшсан улс орны адуун сүрэг дархлаажсан байдагаас тухайн халдварын дэгдэлтийн цар хүрээ бага харин халдвар удаан хугацаанд бүртгэгдээгүй нөхцөлд 2007 онд Австртравид тархсан шиг өргөн далайцтай дэгдэлт тохиолдох нь элбэг. Адууны томуугийн А вирусийн H7N7, H3N8 дэд хэвшинжүүд судлагдаснаас H7N7 дэд хэвшинжийг адууны дунд устсан гэж үзэж түүнийг вакцинаас хасахыг OIE зөвлөж байна. 1980 оноос хойш хугацаанд Монгол дахь энэ вирусийн эргэлтийн тухай тэмдэглэл нь цаашид түүнийг анхааран судлах шаардлагатай гэдгийг харуулж байна. Адууны томуугийн H7N7 дэд хэвшинжийн вирус нь шувууны томуугийн өндөр хоруу чанартай вирүстэй төстэй, харин H3N8 дэд хэвшинж нь соёотон, хун, мөн хүн зэрэг төрөл зүйлийн дунд дамжин тархдаг чадвараараа томуугийн дэлхий дахины экологид ихээхэн үүрэг гүйцэтгэдэг.

Адууны томуугийн H3N8 дэд хэвшинжийн эсрэг вакцины олон хэлбэр байдгаас хемагглютинин уургаг онолон нөлөөлдөг вакцин нь богино хугацааны үр дүнтэй. Вирусийн эргэлтийн явцад бий болсон эсрэгтөрөгчийн дрифт болон ялангуяа залуу адуунд үүссэн богино хугацаанд халдвараас хамгаалдаг эсрэгбиеийн төвшрүүлэг зэргээс шалтгаалан тогвортой дархлааг тогтоож чадахгүй байна. ДЭМБ-аас боловсруулсан хүний томуугийн вирусийн эргэлтийг хянах тогтолцооны аргад суурилсан адууны томуугийн вирусийн эсрэгтөрөгчийн дрифтийг хянах механизмыг OIE нь хэрэгжүүлдэг. Энэ үеэс вакцины чанарыг сайжруулах арга хэмжээ авсаар байгаа боловч бэрхшээл тулгарсаар байна. Гэвч адууны томууг адууны херпесвирусийн 1- р хэвшинжийн (EHV-1) вирүстэй харьцуулахад маш энгийн асуудал. Адууны херпесвирусийн 1 (EHV-1) болон 4-р (EHV-4) хэвшинжүүд нь альфахерпес вирусийн бүлд багтах бөгөөд эдгээр вирусийн халдварын үед адуу сүргээрээ томуутай төст адууны ринопневмонитис өвчнөөр өвдөж үүний улмаас гүү хээл хаях, унагалахаас өмнө ураг үхэх, нас гүйцсэн адуу миелоэнцефалопатигаар өвдөж үхэх нь элбэг. Эдгээр вирус нь адуун дунд өргөн тархсан учраас залуу малд ихэвчлэн далд халдвар явагддаг. Адууг халдварт өвчнөөс сэргийлэх адууны херпесвирусийн вакцинжуулалт төдийлөн үр дүнтэй биш боловч Кентукид хээл хаялт багассан. Энэ халдвараас сэргийлэхэд эсийн болон шингэний дархлаа хоёулаа чухал боловч яг вирүст нөлөөлөх оновчтой дархлааг бий болгож чадахгүй байгаа юм. Вирусийн эсрэг ацикловирийн төрлийн бүтээгдэхүүн үр дүнтэй байгаа учраас EHV-1 дэд хэвшинжийн вирусийн шалтгаант мэдрэлийн эмгэг өвчний үеийн эмчилгээнд илүүтэй хэрэглэж байна.

8. МОНГОЛ УЛС ДАХЬ ХҮНИЙ БРУЦЕЛЛЁЗЫН БАЙДАЛ, ХАНДЛАГА

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Манай улсад малын бруцеллёзын халдварлалт, өвчлөлт өндөр, хүн, мал эмнэлгийн байгуулагуудын ажлын уялдаа, холбоо сул байгаагаас хүний бруцеллёзын тархалт тодорхой буурахгүй байна. Нэг хүн амд ногдох малын тоогоор дэлхийд дээгүүр байрт орж, мал аж ахуйн үйлдвэрлэлд ажиллагсдын тоо жил бүр өсч байгаа нь энэ өвчлөлийн тархалтад нөлөөлж байна. Сүүлийн 5 жилд улсын хэмжээгээр бруцеллёз