CURRENT SITUATION OF AVIAN INFLUENZA IN INDONESIA

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TERMINOLOGY

BIRD FLU IS HIGHLY PATHOGENIC ZOONOSIS CAUSED BY INFLUENZA VIRUS AMONG BIRD WITH ACUTE SYMPTOM, CAN BE TRANSMITTED TO HUMAN WITH SEVERE RESPIRATORY PROBLEM AND MAY DEATHFUL

SYNONIM

BIRD FLU

= AVIAN INFLUENZA (A.I.)

= HIGHLY PATHOGENIC AVIAN INFLUENZA (HPAI)

GEOGRAPHICAL DISTRIBUTION

01.VIET NAM
02. LAOS
03. CAMBODIA
04. THAILAND
05. CHINA
06. INDONESIA
07. SOUTH KOREA
08. EGYPT
09. AZERBAIJAN
10. TURKISTAN
11. JIBOUTY
12. NIGERIA

TYPES OF INFLUENZA

1. HUMAN TO HUMAN TRANSMITTED
1.1. TYPE B
1.2. TYPE C

2. ANIMAL TO ANIMAL TRANSMITTED
2.1. TYPE A WITH SOME SUB TYPES

3. ANIMAL TO HUMAN TRANSMITTED
3.1. TYPE A WITH SOME SUB TYPES:

- H5N1→ BIRD FLU, 2003 – 2007: KILLED 198 OUT OF 322 HUMAN CASES
- H1N1 → SPANISH FLU, 1920, KILLED MEN 20.000.000
- H2N2 → ASIAN FLU, 1958 KILLED MEN 80.000
- H3N2 → HONG KONG FLU, 1968, HUMAN CASE 700.000

VIRUS DIFFERENTIATION

-BASIC DIFFERENTIATION:
1). RIBONUCLEO PROTEIN (NP)
2). PROTEIN SHELL (M-PROTEIN)

-BASIC VIRAL SUB-TYPE / STRAIN SPECIFICITY :
1). HAEMAGGLUTININ PEPLOMER (HA)
2). NEUROMINIDASE PEPLOMER (NA)

-SIX: H0; H1; H2; H3; H5; H7; AND FOUR: N1; N2; N5; N7.
CAUSES OF HUMAN SICKNESS

-NUMBERS AFTER H & N (H2N2) ARE VARIAN SUB TYPE ANTIGENICITY OF THE FORMER STRAIN
-IN NATURE, VIRUS CAN SURVIVE ABOUT 3 DAYS

-IN 56°C, FOR 5 MINUTES, VIRUS IS KILLED

-VIRUS IS KILLED BY DESINFECTANS, FORMALDEHYDE, ALCOHOL 70%

MODE OF TRANSMISSION

1.TRANSMISSION CYCLE IN BIRDS: THROUGH FECES, NOSE AND MOUTH DISCHARGES

2.CAN BE TRANSMITTED TO MAMMALIAN ANIMAL

3. CAN BE TRANSMITTED ALSO TO HUMAN

4.MAN TO MAN TRANSMISSION → VIRUS MUTATION

INCUBATION PERIOD

1.BIRDS: 2 – 4 HARI

2.MAN: 2 – 5 HARI

SYMPTOMS

1.CHICKEN

- -WINGS DROP
- -RESPIRATION DIFFICULTIES
- -NECK STRECHED WITH SOUND: ”HECK”, “HECK”
- -NO EGG DROPS
- -COMB: CYANOSIS→ BIRU
- -LEGS: RED SPOTS →PTECHIAE
- -AUTOPSY→ PTECHIAE IN CROPS

2.HUMAN

- -FEVER, (>38°C),
- -RUNNING NOSE / MUCUS, LACRIMATED
- -CHEST PAIN
- -RESPIRATION DIFFICULTIES
- -DEEP COUGH →PNEUMONIC COUGH

TABLE 1. CHICKEN'S BIRD FLU 2004-2007 *

(X 1. 000)

No	Country	Death	Specimen		Stamping Out
			Test	POS / %	
1	Viet Nam	6,8	2,8	2,22 / 79,0	28,40
2	Thailand	1,4	2,1	1,62 / 77,1	32,40
3	Indonesia	5,4	1,1	0,89 / 80,9	16,43
4	South Korea	1,3	0,8	0,61 / 76,2	8,22
5	Cambodia	2,3	0,8	0,51 / 63,7	5,11
6	Laos	1,4	0,4	0,38 / 95,0	4,03
7	China	4,4	2,4	1,93 / 80,5	13,02
8	Japan	0,9	0,4	0,35 / 83,2	4,16
9	USA	0,7	0,5	0,41 / 81,0	21,83
TOTAL		**33,0**	**11,3**	**8,29 / 79,0**	**114,94**

DATA FROM : WHO, FAO, OIE

TABLE 2. GEOGRAPHICAL DISTRIBUTION AMONG POULTRY IN INDONESIA, 2004 – 2007

NO	PROVINCE	DIST/MUNI	FREQ
1	BANTEN	2	14
2	CENTRAL JAVA	17	26
3	JAKARTA	3	5
4	YOGYAKARTA	3	8
5	EAST JAVA	13	26
6	LAMPUNG	3	4
7	BALI	5	30
8	KALSEL	1	`1
9	CENTRAL KLM	1	1
10	SOUTH SUMTR	6	6
11	NORTH SUMTR	3	3
12	ACEH	2	2
13	WEST SUMTR	3	4
14	JAMBI	1	2
15	RIAU	2	3
16	RIAU ISLANDS.	2	2
17	WEST JAVA	8	14
18	BANGKA BELITUNG	1	2
19	BENGKULU	1	2
20	WEST KALMT	2	2
21	EAST KALMT	2	2
22	SOUTH SULWI	2	4
23	SOUTHEAST SULWI	1	1
24	WEST SULWI	1	1
25	CENTRAL SULWI	1	1
26	NORTH SULWI	2	2
27	WEST NUSTENG	1	1
28	EAST NUSTENG	1	1
29	MALUKU	1	1
30	NORTH MALUKU	1	1
31	WEST IRJA	1	1
32	PAPUA	0	0
33	GORONTALO	0	0
TOTAL		**91**	**171**

Data From : DG of AH, MOA and Subdit of Zoonosis, DG of DC&EH, MOH

TABLE 3. AI (H5N1) CASE IN HUMAN, 2003-2007*

COUNTRY	2003		2004		2005		2006		2007		TOTAL	
	C	D	C	D	C	D	C	D	C	D	C	D
AZERBAIJAN	0	0	0	0	0	0	8	5	0	0	8	5
CAMBODIA	0	0	0	0	4	4	2	2	1	1	7	7
CHINA	1	1	0	0	8	5	13	8	3	2	25	16
JIBOUTI	0	0	0	0	0	0	1	0	0	0	1	0
EGYPT	0	0	0	0	0	0	18	10	16	4	34	14
INDONESIA	**0**	**0**	**0**	**0**	**20**	**13**	**55**	**45**	**43**	**33**	**113**	**91**
IRAQ	0	0	0	0	0	0	3	2	0	0	3	2
THAILAND	0	0	17	17	5	2	3	3	0	0	25	17
TURKY	0	0	0	0	0	0	12	4	0	0	12	4
VIET NAM	3	3	29	29	61	19	0	0	0	0	93	42
LAOS	0	0	0	0	0	0	0	0	2	2	2	2
NIGERIA	0	0	0	0	0	0	0	0	1	1	1	1
TOTAL	**4**	**4**	**46**	**32**	**98**	**43**	**115**	**79**	**65**	**43**	**335**	**206**

**). Data sources: WHO; C = Case, D = Death*

TABLE 4. A I IN HUMAN IN INDONESIA, JUNE 2005-NOVEMBER 2007

NO	PROVINCE	SUSPECTED	H5N1		REMARKS
			C	D	
1	JAKARTA METRO	116	25	22	CASE FATALITY RATE (CFR) = 91/113 X 100% = 86%
2	BANTEN	39	15	13	
3	WEST JAVA	53	29	23	
4	CENTRAL JAVA	12	9	8	
5	EAST JAVA	11	7	5	
6	NORTH SUMATERA	9	8	7	
7	SOUTH SUMATERA	3	1	1	
8	LAMPUNG	8	3	0	
9	YOGYAKARTA	3	0	0	
10	BALI	1	0	0	
11	EAST KALIMANTAN	1	0	0	
12	SOUTH SULAWESI	2	1	1	
13	WEST SUMATERA	5	3	1	
14	RIAU	4	3	2	
15	BALI	2	2	1	
TOTAL		**265**	**113**	**91**	

DATA SOURCE: SUBDIT OF ZOONOSIS, DG OF DC&EH, MOH; D=DEATH, C=CASE

DIAGNOSIS

1. CHICKENS

1.1. SEE THE CLINICAL SYMPTOMS
1.2.SPECIMEN COLLECTION→CLOACAL, TRACHEAL AND NASAL SWABS IN HANK'S SOLUTION, AND BLOOD SERUM
1.3. AUTOPSY→ PATHOLOGY EXAM.

2. HUMAN

2.1. SEE THE CLINICAL SYMPTOMS
2.2.CHEST X-RAY → CLOUDY AREA
2.2.SPECIMEN COLLECTION→SWAB (TRACHEAL, NASAL→ LEFT AND RIGHT, RECTAL* IN HANK'S SOLUTION) & BLOOD SERUM

*). *FOR LESS THAN 5 YEARS OLD CHILD*

CASE DEFINITION

1. SUSPECTED CASE:

FEVER (T>38°C), RUNNING NOSE , LACRIMATED, RESP. DIFFICULTIES, PNEUMONIC COUGH, RELATED TO BIRD CONTACT.

2. PROBABLE CASE:

SUSPECTED, X-RAY → PULMONAL CLOUDY IMAGE, SEROLOGICAL TEST POSITIVE OF FLU TYPE A

3. CONFIRMED CASE:

SUSPECTED + PROBABLE + PCR TEST POSITIVE

SIX INFECTION PHAGES OF AI (H5N1) TO PANDEMIC

1).INTER PANDEMIK PERIOD

1.PHAGE-I: A(H5N1) IN ANIMALS, POSITIVE VIRUS IN MAN BUT NO ANY SYMPTOM

2.PHAGE-II: A(H5N1) VIRUS IN MAN WITH VERY SLIGHT SYMPTOMS, NO DEATH

2).PANDEMIC WARNING PERIOD

3.PHAGE- III: A(H5N1) POS IN MAN, DEATHFLUL, LIMITED IN SMALL FAMILY CLUSTER

4.PHAGE-IV: A(H5N1) IN MAN, DEATHFUL, CLUSTER MEMBER LESS THAN 25, LESS THAN 2 WEEKS TIME

5.PHAGE-V: A(H5N1) IN MAN, DEATHFUL, COVERED ≥ 50 PERSONS, SCATTERRED DISTRIBUTION → SCHOOL, FACTORY WORKERS

3).PANDEMIC PERIOD

6.PHAGE-VI:HUMAN TO HUMAN TRANSMISSION → PANDEMIC

4).POST PANDEMIC PERIOD

LABORATORY DIAGNOSTIC

1. HAEMAGGLUTINATION (H.A.) TEST.

2. ELISA TEST

3. POLYMERASE CHAIN REACTION (P.C.R.)

4. IMMUNO DIFFUSION TEST

5. IMMUNO FLUORESENCE TEST (I.F.T)

6. CELL CULTURE PADA PRIMARY CELL GINJAL KERA

7. ELECTRON MICROSCOPIC EXAMINATION

TREATMENT

1.SYMPTOMATIC CURATIVE

2.TOTAL REST

3.CONDITION REHABILITATED

4.ISOLATION

5.PREVENTION AGAINST SECONDARY INFECTION

6.ANTIBODY REGULATOR: METISPRINOL

7.ANTI VIRAL MEDICINES:

-AMANTADINE, RIMANTADINE, IS GIVEN 48 HOURS POST SYMPTOM OCCURRENCE, 3-5 DAYS, DOSES FOR KIDS 1-9 YR: 5 mg/kgBW/D. GIVEN 2 X/D . IF >9 YR: 100 mg, 2X / D, IF BW<45 KG.

-OSELTAMIFIR: TAMIFLU 75 mg, 2-3x / D, 7-10 DAYS

AI PREVENTION & CONTROL

1. TIGHTING OF BIO-SECURITY
2. OF DESINFECTED FENCES AND TRANSPORT VEHICLES
3. IMPLEMENTATION OF ANIMAL QUARANTINE.
4. WELL COOKED OF MEAT / EGGS.
5. USING MASKER, FIELD COAT,GLASSES, BOOTH SHOES
6. MASS RAPID VACCINATION OF CHICKENS
7. INTER SECTORS, INTER PROGRAMS & INTER INSTITUTIONALS CLOSE COLLABORATION
8. COLLABORATION WITH NTERNATIONAL AGENCIES: WHO, FAO, OIE, NAMRU-2, REDI.
9. QUALITY & QUANTITY OF MAN POWER DEVELOPMENT
10. ACTIVE & PASSIVE SURVEILLANCE

CONCLUSION AND SUGGESTION

01. INDONESIA IS THE HIGHEST CASE AND DEATH NUMBERS OF AI AMONG 12 INFECTED COUNTRIES IN THE WORLD
02. ALL 33 PROVINCES IN INDONESIA BECOME HIGH RISK OF AI INFECTION
3. MIGRATED BIRD IS ALSO INCRIMINATED AS AN AGENT OF AI SPREADING
04. HUMAN TO HUMAN AI TRANSMISSION IS NOT DETERMINED YET IN INDONESIA
05. PUBLIC HEALTH AND VETERINARY PUBLIC HEALTH WORKER COLLABORATION MUST BE TIGHTEN IN SURVEILLANCE AND AI CONTROL ACTIVITIES
06. SUPPORT FROM INTERNATIONAL AGENCIES (WHO, FAO, OIE, BAMRU-2, REDI) IS NEEDED
07. PILOT PROJECT OF AI CONTROL AND PANDEMIC INFLUENZA WAS DEVELOPED IN INDONESIA SUPPORTED BY INDO, SINGP & USA
08. TOURISM ACTIVITY IS NOT DISTURBED BY AI SINCE INTERVENTION AGAINST ALL AI OUTBREAK WAS DONE WELL
09. OSELTAMIFIR IS DISTRIBUTED IN 31 OUT OF 33 AI INFECTED PROVINCES
10. COMMUNITY PARTICIPATION TROUGH HEALTH AND ANIMAL HEALTH TRAINED CADRE THAT SELECTED BY VILLAGE COUNCIL