Gruppo di ricerca geriatrica

Journal Club - 10 Novembre 2006

L'influenza

Salvatore Speciale

CASA di CURA
ANCELLE DELLA CARITA'
CREMONA

Cenni storici

Il termine Influenza, termine deriva dal latino "influentia", parola che rifletteva la credenza degli antichi romani secondo i quali la comparsa delle epidemie era dovuta all'**influenza di congiunzioni sfavorevoli delle stelle.**

La prima epidemia influenzale risale al 430 a.C. (peste di Atene) i cui esiti drammatici furono probabilmente dovuti a complicazioni batteriche.

La prima pandemia è datata 1580. Si sono succedute 31 pandemie.

Le più importanti nel

- 1743
- 1889-1890
- 1918-1919 (spagnola da virus A H1N1)
- 1957 (asiatica da virus A H2N2)
- 1968 (Hong Kong da virus H3N2)

Sommario

- Epidemiologia
- Cenni di biologia
- Clinica
- Impatto
  - Ospedalizzazione
  - Mortalità
- Prevenzione ed opzioni terapeutiche
- Caso clinico
- Conclusioni

Epidemiologia

The contribution of influenza to these seasonal deaths remains a subject of controversy, with some authors arguing that influenza epidemics trigger the majority of excess deaths, and others arguing that they trigger only a small minority

Deaths caused from influenza must be estimated indirectly because most influenza infections are not confirmed virologically

Retrospective cohort studies have shown a surprisingly large protective effect of influenza vaccination against deaths from any cause

Mortality due to Influenza in the United States –An Annualized Regression Approach Using Multiple-Cause Mortality Data.Dushoff J et al. American Journal of Epidemiology November 30, 2005

Epidemiologia

Moreover, deaths triggered by influenza may occur as a result of a number of final causes, including **pneumonia** and a wide variety of **respiratory and circulatory causes**, and may occur weeks after initial infection

Mortality due to Influenza in the United States –An Annualized Regression Approach Using Multiple-Cause Mortality Data.Dushoff J et al. American Journal of Epidemiology November 30, 2005

Epidemics of influenza typically occur during the winter months in temperate regions and have been responsible for an average of approximately 36,000 deaths/year in the United States during 1990–1999.

As the leading cause of healthcare encounters for acute respiratory tract infections, influenza is associated with 20.00-40.000 deaths, up 300.000 hospitalizations and countless sick days and episodes in which individuals are temporarily unable to attend to their normal life activities every years

Smith et al. Prevention and control of inflenza: recommendations of the advisory committee on immunization practices (ACIP) MMWR Recomm Rep 2006;55:1-42.

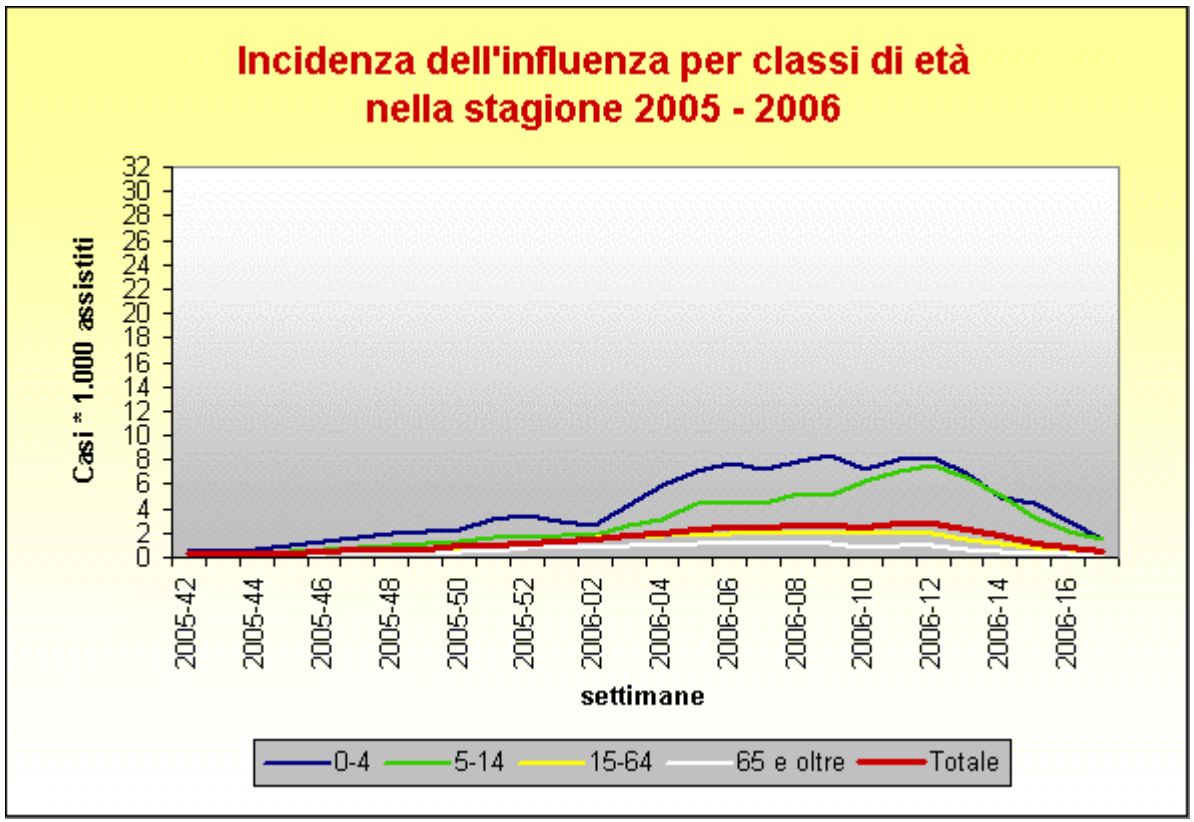
Epidemiologia

Influenza viruses also can cause **pandemics**, during which rates of illness and death from influenza-related complications can increase worldwide.

Influenza viruses cause disease among all age groups. Rates of infection are highest among children, but rates of serious illness and death are highest among persons aged ≥ 65 years, children aged <2 years, and persons of any age who have medical conditions that place them at increased risk for complications from influenza.

Epidemiologia

- Nella stagione 2002/2003 si sono registrati circa 5.400.000 casi di sindrome influenzale in Italia.



Stagione 2005-2006

- The first infections that virus is isolated from usually in early to mid-October, and influenza-positive infections continue to be osserved through May.
- In the 2005-2006 season, influenza A H3N2 was the strain most commonly seen overall, but as the season progressed, influenza B was more frequently isolated from respiratory specimens.
- Although virus A has been the most common strain predominance and temporal pattern in the US for some years, influenza B viruses tended to be more commonly reported in Europe, and influenza A (H1N1) and influenza B viruses predominated in Asia in 2005-2006.

Update: influenza activity – United States and Worldwide, 2005-06 season, and composition of the 2006-07 influenza vaccine. MMWR Morb Mort Wkly Rep. 2006;55:648-653.

Cenni di biologia

- I virus influenzali (orthomixovirus) vengono classificati in 3 tipi (A,B,C). I virus **A e B** causano epidemia nella specie umana. Il virus **C** è molto raro.
- **Il virus dell'Influenza A** è ulteriormente classificato in sottogruppi (24) in base alle caratteristiche degli antigeni di superficie, denominati emoagglutinina (H) e neuroaminidasi (N).
- Il virus B è presente solo nell'uomo e non esistono sottotipi
- I virus A e B vanno incontro a frequenti e permanenti cambiamenti del loro assetto genetico, determinando la comparsa di sottotipi nuovi dal punto di vista antigenico

Cenni di biologia

- Le mutazioni del virus influenzale possono avvenire in due modi:
- A) spostamento antigenico (*antigenic drift*): graduale modifica della sequenza degli aminoacidi che compongono le proteine in grado di scatenare la risposta immunitaria. E' responsabile delle epidemie stagionali (A e B).

- B) mutazione antigenica (*antigenic shift*): comparsa nell'uomo di un nuovo ceppo virale con proteina di superficie appartenente a sottotipo diverso da quelli comunemente circolanti nell'uomo. Questi fenomeni sono dovuti o a riassortimenti tra virus umani e animali (aviari o suini) oppure alla trasmissione diretta di virus non umani all'uomo.

Cenni di biologia

- La comparsa di un ceppo virale con proteine di superficie radicalmente nuove, quindi di un virus influenzale completamente diverso da quelli precedenti, non è di per sé responsabile di pandemia.

- Occorre, infatti, che il nuovo virus sia capace di trasmettersi da uomo a uomo in modo efficace.

- Occasionalmente, tuttavia, si può avere un passaggio diretto di virus aviari all'uomo, come avvenuto nel 1997 ad Hong Kong (trasmissione di virus A/H5N1 dal pollo all'uomo) e come si sta verificando, dal dicembre 2003, nell'area del sud-est asiatico ed in altri Paesi distribuiti in zone diverse dell'Europa e dell'Africa.

- Da tale data, il virus dell'influenza aviaria A/H5N1 ha infettato più di 250 persone, provocando 147 decessi

Cenni di biologia

- L’ Immunità agli antigeni di superficie, (soprattutto l’ emoagglutinina), riduce la probabilità di infezione e la severità della malattia.

- Gli anticorpi specifici per una variante antigenica di virus influenzale conferisce una limitata o nulla protezione contro altri tipi di influenza.

- E’ proprio questo frequente sviluppo di varianti antigeniche *(antigenic drift)* la base virologica delle epidemie stagionali e il motivo per cui nei vaccini annuali vengono incorporati più ceppi virali.

Clinica – modalità di trasmissione

- I virus influenzali si propagano tramite gli starnuti, con la tosse o anche con la semplice fonazione.
- Il periodo di incubazione tipico per l'influenza è 1-4 giorni con media di due giorni
- La persona infetta è in grado di trasmettere il virus da pochi giorni prima fino a 5-7 giorni dopo la comparsa dei sintomi.
- I bambini possono infettare per oltre 10 giorni
- I pazienti severamente immunocompromessi possono propagare il virus per settimane o mesi.
- L' elevata capacità di diffusione del virus spiega perché in una popolazione l'epidemia raggiunga il culmine dopo soli 15 giorni dal manifestarsi dei primi casi.

Criteri diagnostici

Affezione respiratoria acuta ad esordio brusco ed improvviso con febbre > 38°C accompagnata da almeno un sintomo tra i seguenti:

- cefalea
- malessere generalizzato
- sensazione di febbre (sudorazione, brividi)
- astenia

e da almeno uno dei seguenti sintomi respiratori:

- tosse
- faringodinia
- congestione nasale.

Per la diagnosi clinica di influenza nel **bambino** è importante considerare quanto indicato per gli adulti tenendo conto che:

1) i bambini più piccoli non sono in grado di descrivere la sintomatologia sistemica che invece si può manifestare con:

- irritabilità
- pianto
- inappetenza

2) nel lattante l'influenza è spesso accompagnata da vomito e diarrea e solo eccezionalmente da febbre;

3) occhi arrossati e congiuntivite sono caratteristici dell'influenza nei bambini in età prescolare, in caso di febbre elevata;

4) nel bambino di 1-5 anni la sindrome influenzale si associa frequentemente a laringotracheite e bronchite e a febbre elevata.

Clinica - sintomi

Sulla base dei soli sintomi, è difficile distinguere le malattie respiratorie causate dall'influenza da quelle causate da altri agenti patogeni respiratori

Clinica - Diagnosi

Reported sensitivities and specificities of clinical definitions for **influenza-like illness (ILI)** in studies primarily among adults that include fever and cough have ranged from 63% to 78% and 55% to 71%, respectively, compared with viral culture.

Sensitivity and predictive value of clinical definitions can vary, depending on the degree of co-circulation of other respiratory pathogens and the level of influenza activity.

Boivin et al. Predicting influenza infections during epidemics with use of a clinical case definition. Clin Infect Dis 2000;31:1166-9.

Monto et al. Clinical signs and symptoms predicting influenza infection. Arch Intern Med 2000;160:3243-7.

Clinica - Diagnosi

A study among older nonhospitalized patients determined that symptoms of fever, cough, and acute onset had a positive predictive value of 30% for influenza.

Govaert et al. The predictive value of influenza symptomatology in elderly people. Fam Pract 1998;15:16--22

A study of hospitalized older patients with chronic cardio -pulmonary disease determined that a combination of fever, cough, and illness of <7 days was 78% sensitive and 73% specific for influenza.

Walsh et al. Clinical features of influenza A virus infection in older hospitalized persons. J Am Geriatr Soc 2002;50:1498--503.

A study among vaccinated older persons with chronic lung disease reported that cough was not predictive of influenza infection, although having a fever or feverishness was 68% sensitive and 54% specific for influenza infection.

Neuzil et al. Recognizing influenza in older patients with chronic obstructive pulmonary disease who have received influenza vaccine. Clin Infect Dis 2003;36:169--74.

Does This Patient Have Influenza?

Stephanie A. Call, MD, MSPH
Mark A. Vollenweider, MD, MPH
Carlton A. Hornung, PhD, MPH
David L. Simel, MD, MHS
W. Paul McKinney, MD

Context Influenza vaccination lowers, but does not eliminate, the risk of influenza. Making a reliable, rapid clinical diagnosis is essential to appropriate patient management that may be especially important during shortages of antiviral agents caused by high demand.

Objectives To systematically review the precision and accuracy of symptoms and signs of influenza. A secondary objective was to review the operating characteristics of rapid diagnostic tests for influenza (results available in <30 min).

Data Sources Structured search strategy using MEDLINE (January 1966-September 2004) and subsequent searches of bibliographies of retrieved articles to identify articles describing primary studies dealing with the diagnosis of influenza based on clinical signs and symptoms. The MEDLINE search used the Medical Subject Headings *EXP influenza* or *EXP influenza A virus* or *EXP influenza A virus human* or *EXP influenza B virus* and the Medical Subject Headings or terms *EXP sensitivity and specificity* or *EXP medical history taking* or *EXP physical examination* or *EXP reproducibility of results* or *EXP observer variation* or *symptoms.mp* or *clinical signs.mp* or *sensitivity.mp* or *specificity.mp*.

Study Selection Of 915 identified articles on clinical assessment of influenza-related illness, 17 contained data on the operating characteristics of symptoms and signs using an independent criterion standard. Of these, 11 were eliminated based on 4 inclusion criteria and availability of nonduplicative primary data.

Data Extraction Two authors independently reviewed and abstracted data for estimating the likelihood ratios (LRs) of clinical diagnostic findings. Differences were resolved by discussion and consensus.

Data Synthesis No symptom or sign had a summary LR greater than 2 in studies that enrolled patients without regard to age. For decreasing the likelihood of influenza, the absence of fever (LR, 0.40; 95% confidence interval [CI], 0.25-0.66), cough (LR, 0.42; 95% CI, 0.31-0.57), or nasal congestion (LR, 0.49; 95% CI, 0.42-0.59) were the only findings that had summary LRs less than 0.5. In studies limited to patients aged 60 years or older, the combination of fever, cough, and acute onset (LR, 5.4; 95% CI, 3.8-7.7), fever and cough (LR, 5.0; 95% CI, 3.5-6.9), fever alone (LR, 3.8; 95% CI, 2.8-5.0), malaise (LR, 2.6; 95% CI, 2.2-3.1), and chills (LR, 2.6; 95% CI, 2.0-3.2) increased the likelihood of influenza to the greatest degree. The presence of sneezing among older patients made influenza less likely (LR, 0.47; 95% CI, 0.24-0.92).

Conclusions Clinical findings identify patients with influenza-like illness but are not particularly useful for confirming or excluding the diagnosis of influenza. Clinicians should use timely epidemiologic data to ascertain if influenza is circulating in their communities, then either treat patients with influenza-like illness empirically or obtain a rapid influenza test to assist with management decisions.

JAMA. 2005;293:987-997

Clinica - Prognosi

- La malattia influenzale, per la gran parte dei pazienti, tipicamente si risolve dopo 3-7 giorni, sebbene la tosse e il malessere generale possono persistere per oltre 2 settimane.
- In alcuni pazienti l'influenza può esacerbare condizioni mediche sottostanti (malattie cardiache e polmonari), indurre una **polmonite batterica secondaria** o una **polmonite influenzale virale**, o concorrere come agente coinfettante insieme ad altri patogeni virali o batterici.
- L'infezione influenzale è stata associata, sebbene raramente, a manifestazioni patologiche come encefalopatia, mielite, sindrome di Reye, miosite, miocardite, e pericardite.

Criteri per il ricovero ospedaliero

B V

Quando il decorso clinico dell'influenza è complicato dall'insorgenza di broncopolmonite si raccomanda di considerare i seguenti fattori di rischio per un eventuale ricovero ospedaliero

Tali fattori, in particolare se multipli e correlati allo stato clinico o socioeconomico del paziente, aumentano il rischio di complicanze e mortalità; in ogni caso non si può prescindere dal giudizio clinico globale del medico.[2]

Criteri clinici:

- soggetti di età superiore a 65 anni
- presenza di malattie concomitanti: malattie croniche respiratorie, cardiache, renali, epatiche, tumori, diabete mellito, abuso cronico di alcool, malnutrizione, malattie cerebrovascolari, postsplenectomia, ospedalizzazione nell'ultimo anno
- frequenza respiratoria ≥30 atti/minuto, pressione diastolica ≤60mmHg o pressione sistolica <90mmHg, polso ≥125/min, temperatura corporea <35 o ≥40 °C, variazioni dello stato mentale (disorientamento, stupore), evidenza di siti extrapolmonari di infezione.

Dati di laboratorio:

- globuli bianchi <4.000/ml o >30.000/ml o numero assoluto di neutrofili <1.000/ml
- PaO_2 <60mmHg o $PaCO_2$ >50mmHg
- evidenza di alterata funzionalità renale: creatinina >1,2mg/dl
- evoluzione radiografica sfavorevole e/o polmonite con focolai multipli, presenza di cavitazione o versamento pleurico
- ematocrito <30% o emoglobina <9g/dl,
- evidenza di sepsi o di segni di danno d'organo come l'acidosi metabolica o alterazioni della coagulazione
- pH arterioso <7,35.

B V

Il ricovero è raccomandato in pazienti con condizioni economiche o sociali che non garantiscano l'assistenza a domicilio.

PNLG – La gestione della sindrome influenzale. 2005

Ospedalizzazione

- During influenza epidemics from 1979–80 through 2000–01, the estimated overall number of influenza-associated hospitalizations in the United States ranged from approximately 54,000 to 430,000/epidemic.
- An average of approximately 226,000 influenza-related excess hospitalizations occurred per year, with 63% of all hospitalizations occurring among persons aged ≥ 65 years.
- Since the 1968 influenza A (H3N2) virus pandemic, the greatest numbers of influenza-associated hospitalizations have occurred during epidemics caused by type A (H3N2) viruses.

Thompson et al. Influenza-associated hospitalizations in the United States. JAMA 2004;292:1333--40

Stato funzionale

A study of the impact of Influenza on the functional status of frail older people *Barker et al* Arch Int Med 1998;158:645-650

METHODS: In Nursing home: 116 who developed influenza-like illness (ILI) and survived at least 4 months served as case subjects; 127 without ILI who survived served as the comparison subjects. Measures of functional status 1 to 2 months before outbreaks and 1 to 2 months and 3 to 4 months after outbreak were collected from medical records.

RESULTS: among surviving case subjects and comparison subjects, 25% and 15.7% respectively, experienced decline in at least 1 major function. Case subjects experienced significant decline in independence in bathing, dressing and mobility.

CONCLUSIONS: Influenza is observed to cause decline in major physical functions in more than 9 % of survivors. Such disabling outcomes constitute an important new measure of Impact of influenza on the frail elderly.

Morte

- Deaths of older adults account for ≥ 90% of deaths attributed to **pneumonia** and **influenza**. In one study of influenza epidemics, approximately 19,000 influenza-associated pulmonary and circulatory deaths per influenza season occurred during 1976–1990, compared with approximately 36,000 deaths during 1990--1999.

- The **Spanish influenza pandemic** of 1918-19 was one of the most devastating diseases in history, killing perhaps as many as 50-100 million people worldwide.

Simonsen et al. Pandemic versus epidemic influenza mortality: a pattern of changing age distribution. J Infect Dis 1998;178:53--60.

Thompson et al. Mortality associated with influenza and respiratory syncytial virus in the United States. JAMA 2003;289:179--86.

Morte

- Estimated rates of influenza-associated pulmonary and circulatory **deaths**/100,000 persons were 0.4--0.6 among persons aged 0–49 years, 7.5 among persons aged 50-64 years, and 98.3 among persons aged ≥ 65 years.

National Center for Health Statistics. Health, United States, 1998. Hyattsville, MD: US Department of Health and Human Services, CDC; 1998

- In the United States, the number of influenza-associated deaths might be increasing in part because the number of older persons is increasing. In addition, influenza seasons in which influenza A (H3N2) viruses predominate are associated with higher mortality; influenza A (H3N2) viruses predominated in 90% of influenza seasons during 1990–1999, compared with 57% of seasons during 1976–1990.
- Deaths from influenza are uncommon among both children with and without high-risk conditions, but do occur.

CDC update:influenza associated deaths reported among children aged< 18 year US 2003-04 influenza season. MMWR 2004;52:1286-8

Prevenzione - vaccini

- In the United States, the primary option for reducing the effect of influenza is **immunoprophylaxis with vaccine**. **Inactivated (i.e., killed virus) influenza vaccine** and **live, attenuated influenza vaccine** are available for use in the United States .
- Vaccinating persons at high risk for complications and their contacts each year before seasonal increases in influenza virus circulation is the **most effective** means of reducing the effect of influenza.

Prevenzione

- In 2000, 40 of 51 developed or rapidly developing countries recommended vaccination for all individuals aged 60–65 or older

- In 2003, 290 million doses of vaccine were distributed worldwide.

Chi deve vaccinarsi

La vaccinazione è raccomandata per:

- persone di età pari o superiore ai 65 anni
- bambini di età superiore ai 6 mesi e adulti affetti da patologie croniche
- bambini e adolescenti in trattamento a lungo termine con acido acetilsalicilico, a rischio di sindrome di Reye in caso di infezione influenzale
- bambini pre-termine (nati prima della 37ª settimana di gestazione) e di basso peso alla nascita (inferiore ai 2500 g), dopo il compimento del 6° mese.
- donne che saranno nel secondo e terzo trimestre di gravidanza durante la stagione epidemica
- persone di qualunque età ricoverate presso strutture per lungodegenti
- medici e personale sanitario di assistenza
- familiari di persone ad alto rischio
- addetti a servizi pubblici di primario interesse collettivo

Options for Controlling Influenza

- **Vaccination** coverage can be increased by administering vaccine to persons **during hospitalizations** or **routine health-care visits** before the influenza season, making special visits to physicians' offices or clinics unnecessary.
- When vaccine and epidemic strains are well-matched, achieving increased vaccination rates among persons living in closed settings (e.g., **nursing homes** and other **chronic-care facilities**) and among staff can reduce the risk for outbreaks by inducing herd immunity
- Vaccination of **health-care workers** and other persons in close contact with persons at increased risk for severe influenza illness can also reduce transmission of influenza and subsequent influenza-related complications.
- **Antiviral drugs** used for chemoprophylaxis or treatment of influenza are a key adjunct to vaccin. However, antiviral medications are not a substitute for vaccination

Composizione del vaccino anti-influenzale

- Both the **inactivated** and **live, attenuated vaccines** prepared for the 2005-06 season will include **A/California/7/2004 (H3N2)-like, A/New Caledonia/20/99 (H1N1)-like, and B/Shanghai/361/2002-like antigens.**

- Both the inactivated and live, attenuated vaccines prepared for the 2006-07 season will include **A/New Caledonia/20/1999 (H1N1)-like, A/Wisconsin/67/2005 (H3N2)-like, and B/Malaysia/2506/2004-like antigens (for the A/Wisconsin/67/2005 [H3N2]-like antigen**, manufacturers may use the antigenically equivalent A/Hiroshima/52/2005 virus, and for the B/ Malaysia/2506/2004-like antigen, manufacturers may use the antigenically equivalent B/Ohio/1/2005 virus).

- Influenza viruses for both the inactivated and live attenuated influenza vaccines are initially grown in embryonated hens eggs. Thus, both vaccines might contain limited amounts of residual egg protein.

Differenze tra vaccini

TABLE 2. Live, attenuated influenza vaccine (LAIV) compared with inactivated influenza vaccine

Factor	LAIV	Inactivated influenza vaccine
Route of administration	Intranasal spray	Intramuscular injection
Type of vaccine	Live virus	Killed virus
No. of included virus strains	3 (2 influenza A, 1 influenza B)	3 (2 influenza A, 1 influenza B)
Vaccine virus strains updated	Annually	Annually
Frequency of administration	Annually	Annually
Approved age and risk groups*	Healthy persons aged 5–49 yrs	Persons aged ≥6 mos
Interval between two doses recommended for children aged 6 mos–<9 yrs who are receiving influenza vaccine for the first time	6–10 wks	4 weeks
Can be administered to family members or close contacts of immunocompromised persons not requiring a protected environment	Yes	Yes
Can be administered to family members or close contacts of immunocompromised persons requiring a protected environment (e.g., hematopoietic stem cell transplant recipient)	Inactivated influenza vaccine preferred	Yes
Can be administered to family members or close contacts of persons at high risk but not severely immunocompromised	Yes	Yes
Can be simultaneously administered with other vaccines	Yes†	Yes§
If not simultaneously administered, can be administered within 4 wks of another live vaccine	Prudent to space 4 wks apart	Yes
If not simultaneously administered, can be administered within 4 wks of an inactivated vaccine	Yes	Yes

* Populations at high risk for complications of influenza infection include persons aged ≥65 years; residents of nursing homes and other chronic-care facilities that house persons with chronic medical conditions; adults and children with chronic disorders of the pulmonary or cardiovascular systems; adults and children with chronic metabolic diseases (including diabetes mellitus), renal dysfunction, hemoglobinopathies, or immunnosuppression; children and adolescents receiving long-term aspirin therapy (at risk for Reye syndrome after wild-type influenza infection); pregnant women; and children aged 6–59 months.
† No data are available regarding effect on safety or efficacy.
§ Inactivated influenza vaccine coadministration has been evaluated systematically only among adults with pneumococcal polysaccharide vaccine.

Prevention and Control of influenza. Recommendations of the Advisory Committee on immunization practice (ACIP)
MMWR July 28, 2006

Effectiveness of Inactivated Influenza Vaccine

- The effectiveness of inactivated influenza vaccine depends primarily on the **age** and **immunocompetence** of the vaccine recipient and the **degree of similarity** between the viruses in the vaccine and those in circulation.
- The majority of vaccinated children and young adults develop high postvaccination hemagglutination inhibition antibody titers. These antibody titers are protective against illness caused by strains that are antigenically similar to those strains of the same type or subtype included in the vaccine .
- Older persons and persons with certain chronic diseases might develop lower postvaccination antibody titers than healthy young adults and thus can *remain susceptible to influenza infection and influenza-related upper respiratory tract illness*.

Efficacia del vaccino negli ultra 65 enni

- A randomized trial among noninstitutionalized persons aged ≥60 years reported a vaccine efficacy of 58% against influenza respiratory illness, but indicated that efficacy might be lower among those aged ≥70 years.

- The vaccine can also be effective in preventing secondary complications and reducing the risk for influenza-related hospitalization and death among adults aged ≥65 years with and without high-risk medical conditions (e.g., heart disease and diabetes).

Prevention and Control of influenza. Recommendations of the Advisory Committee on immunization practice (ACIP) MMWR July 28, 2006

Efficacia del vaccino negli ultra 65 enni

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Influenza Vaccination and Reduction in Hospitalizations for Cardiac Disease and Stroke among the Elderly

Kristin L. Nichol, M.D., M.P.H., M.B.A., James Nordin, M.D., M.P.H., John Mullooly, Ph.D., Richard Lask, M.D., Kelly Fillbrandt, B.S., and Marika Iwane, Ph.D.

ABSTRACT

BACKGROUND

Upper respiratory tract illnesses have been associated with an increased risk of ischemic heart disease and stroke. During two influenza seasons, we assessed the influence of vaccination against influenza on the risk of hospitalization for heart disease and stroke, hospitalization for pneumonia and influenza, and death from all causes.

METHODS

Cohorts of community-dwelling members of three large managed-care organizations who were at least 65 years old were studied during the 1998–1999 and 1999–2000 influenza seasons. Administrative and clinical data were used to evaluate outcomes, with multivariable logistic regression to control for base-line demographic and health characteristics of the subjects.

RESULTS

There were 140,055 subjects in the 1998–1999 cohort and 146,328 in the 1999–2000 cohort, of which 55.5 percent and 59.7 percent, respectively, were immunized. At base line, vaccinated subjects were on average sicker, having higher rates of most coexisting conditions, outpatient care, and prior hospitalization for pneumonia than unvaccinated subjects. Unvaccinated subjects, however, were more likely to have been given a prior diagnosis of dementia or stroke. Vaccination against influenza was associated with a reduction in the risk of hospitalization for cardiac disease (reduction of 19 percent during both seasons [P<0.001]), cerebrovascular disease (reduction of 16 percent during the 1998–1999 season [P<0.018] and 23 percent during the 1999–2000 season [P<0.001]), and pneumonia or influenza (reduction of 32 percent during the 1998–1999 season [P<0.001] and 29 percent during the 1999–2000 season [P<0.001]) and a reduction in the risk of death from all causes (reduction of 48 percent during the 1998–1999 season [P<0.001] and 50 percent during the 1999–2000 season [P<0.001]). In analyses according to age, the presence or absence of major medical conditions at base line, and study site, the findings were consistent across all subgroups.

CONCLUSIONS

In the elderly, vaccination against influenza is associated with reductions in the risk of hospitalization for heart disease, cerebrovascular disease, and pneumonia or influenza as well as the risk of death from all causes during influenza seasons. These findings highlight the benefits of vaccination and support efforts to increase the rates of vaccination among the elderly.

Efficacia del vaccino negli ultra 65 enni

- Among elderly persons **not living in nursing homes** or similar chronic-care facilities, influenza vaccine is 30%-50% effective in preventing hospitalization for **pneumonia** and **influenza** .

- Among older persons who do **reside in nursing homes**, influenza vaccine is most effective in preventing severe illness, secondary complications, and deaths.Among this population, the vaccine can be 50%-60% effective in preventing **influenza-related hospitalization or pneumonia** and 80% effective in preventing **influenza-related death**, although the effectiveness in preventing influenza illness often ranges from 30% to 40%.

Prevention and Control of influenza. Recommendations of the Advisory Committee on immunization practice (ACIP) MMWR July 28, 2006

Efficacy and effectiveness of influenza vaccines in elderly people: a systematic review

T Jefferson, D Rivetti, A Rivetti, M Rudin, C Di Pietrantonj, V Demicheli

Lancet 2005; 366: 1165–74

Summary

Background Influenza vaccination of elderly individuals is recommended worldwide. Our aim was to review the evidence of efficacy and effectiveness of influenza vaccines in individuals aged 65 years or older.

Methods We searched five electronic databases to December, 2004, in any language, for randomised (n=5), cohort (n=49), and case-control (n=10) studies, assessing efficacy against influenza (reduction in laboratory-confirmed cases) or effectiveness against influenza-like illness (reduction in symptomatic cases). We expressed vaccine efficacy or effectiveness as a proportion, using the formula VE=1–relative risk (RR) or VE*=1–odds ratio (OR). We analysed the following outcomes: influenza, influenza-like illness, hospital admissions, complications, and deaths.

Findings In homes for elderly individuals (with good vaccine match and high viral circulation) the effectiveness of vaccines against influenza-like illness was 23% (95% CI 6–36) and non-significant against influenza (RR 1·04, 0·43–2·51). Well matched vaccines prevented pneumonia (VE 46%, 30–58) and hospital admission (VE 45%, 16–64) for and deaths from influenza or pneumonia (VE 42%, 17–59), and reduced all-cause mortality (VE 60%, 23–79). In elderly individuals living in the community, vaccines were not significantly effective against influenza (RR 0·19, 0·02–2·01), influenza-like illness (RR 1·05, 0·58–1·89), or pneumonia (RR 0·88, 0·64–1·20). Well matched vaccines prevented hospital admission for influenza and pneumonia (VE 26%, 12–38) and all-cause mortality (VE 42%, 24–55). After adjustment for confounders, vaccine performance was improved for admissions to hospital for influenza or pneumonia (VE* 27%, 21–33), respiratory diseases (VE* 22%, 15–28), and cardiac disease (VE* 24%, 18–30), and for all-cause mortality (VE* 47%, 39–54).

Interpretation In long-term care facilities, where vaccination is most effective against complications, the aims of the vaccination campaign are fulfilled, at least in part. However, according to reliable evidence the usefulness of vaccines in the community is modest.

ORIGINAL INVESTIGATION

Impact of Influenza Vaccination on Seasonal Mortality in the US Elderly Population

ARCHIVES EXPRESS

Lone Simonsen, PhD; Thomas A. Reichert, MD, PhD; Cecile Viboud, PhD; William C. Blackwelder, PhD; Robert J. Taylor, PhD; Mark A. Miller, MD

Background: Observational studies report that influenza vaccination reduces winter mortality risk from any cause by 50% among the elderly. Influenza vaccination coverage among elderly persons (≥65 years) in the United States increased from between 15% and 20% before 1980 to 65% in 2001. Unexpectedly, estimates of influenza-related mortality in this age group also increased during this period. We tried to reconcile these conflicting findings by adjusting excess mortality estimates for aging and increased circulation of influenza A(H3N2) viruses.

Methods: We used a cyclical regression model to generate seasonal estimates of national influenza-related mortality (excess mortality) among the elderly in both pneumonia and influenza and all-cause deaths for the 33 seasons from 1968 to 2001. We stratified the data by 5-year age group and separated seasons dominated by A(H3N2) viruses from other seasons.

Results: For people aged 65 to 74 years, excess mortality rates in A(H3N2)-dominated seasons fell between 1968 and the early 1980s but remained approximately constant thereafter. For persons 85 years or older, the mortality rate remained flat throughout. Excess mortality in A(H1N1) and B seasons did not change. All-cause excess mortality for persons 65 years or older never exceeded 10% of all winter deaths.

Conclusions: We attribute the decline in influenza-related mortality among people aged 65 to 74 years in the decade after the 1968 pandemic to the acquisition of immunity to the emerging A(H3N2) virus. We could not correlate increasing vaccination coverage after 1980 with declining mortality rates in any age group. Because fewer than 10% of all winter deaths were attributable to influenza in any season, we conclude that observational studies substantially overestimate vaccination benefit.

Arch Intern Med. 2005;165:265-272

Re-Vaccination in elderly

A Dutch cohort study found a 24% reduction in annual mortality risk associated with revaccination of elderly people.

The authors further estimated that **vaccination prevents 1 death for every 302 elderly people vaccinated** — a result that implies that influenza is a leading cause of death among the elderly.

Voordouw et al. Annual revaccination against influenza and mortality risk in community-dwelling elderly persons. JAMA. 2004;292:2089-2095.

Another Dutch cohort study found a 33% reduction in lower respiratory tract infections or pneumonia in community-dwelling elderly individuals (only without comorbidity and during the epidemic period) associated with revaccination of elderly individuals.

Voordouw et al. Annual influenza vaccination in community-dwelling elderly individuals and the risk of lower repiratory tract infections or pneumonia. Arch. Intern Med 2006;166:1980-1985

AHA/ACC Science Advisory

Influenza Vaccination as Secondary Prevention for Cardiovascular Disease

A Science Advisory From the American Heart Association/ American College of Cardiology

Endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation, the American Association of Critical Care Nurses, the American Association of Heart Failure Nurses, the American Diabetes Association, the Association of Black Cardiologists, Inc., the Heart Failure Society of America, and the Preventive Cardiovascular Nurses Association.

The American Academy of Nurse Practitioners supports the recommendations of this scientific advisory.

This science advisory is consistent with the recommendations of the Centers for Disease Control and Prevention and the Advisory Committee on Immunization Practices.

Matthew M. Davis, MD, MAPP; Kathryn Taubert, PhD, FAHA; Andrea L. Benin, MD; David W. Brown, MSPH, MSc; George A. Mensah, MD, FAHA, FACC; Larry M. Baddour, MD; Sandra Dunbar, RN, DSN, FAHA; Harlan M. Krumholz, MD, FAHA, FACC

Abstract—Evidence from cohort studies and a randomized clinical trial indicates that annual vaccination against seasonal influenza prevents cardiovascular morbidity and all-cause mortality in patients with cardiovascular conditions. The American Heart Association and American College of Cardiology recommend influenza immunization with inactivated vaccine (administered intramuscularly) as part of comprehensive secondary prevention in persons with coronary and other atherosclerotic vascular disease (Class I, Level B). Immunization with live, attenuated vaccine (administered intranasally) is contraindicated for persons with cardiovascular conditions. It is important to note that influenza vaccination coverage levels overall and in this population remain well below national goals and are marked by disparities across different age and ethnic groups. One of the barriers to vaccination for patients with cardiovascular disease is that cardiology practices frequently do not stock and administer influenza vaccine. Healthcare providers who treat individuals with cardiovascular disease can help improve influenza vaccination coverage rates by providing and strongly recommending vaccination to their patients before and throughout the influenza season. (***Circulation.*** **2006;114:1549-1553.)**

Key Words: AHA Scientific Statements ■ cardiovascular diseases ■ influenza, human ■ influenza vaccines

Local Reactions

• In placebo-controlled studies among adults, the most frequent side effect of vaccination is soreness at the vaccination site (affecting 10%--64% of patients) that lasts <2 days. These local reactions typically are mild and rarely interfere with the person's ability to conduct usual daily activities.

Systemic Reactions

• Fever, malaise, myalgia, and other systemic symptoms can occur after vaccination with inactivated vaccine and most often affect persons who have had no previous exposure to the influenza virus antigens in the vaccine (e.g., young children)
• These reactions begin 6-12 hours after vaccination and can persist for 1-2 days.
• Among older persons and healthy young adults, administration of split-virus influenza vaccine is not associated with higher rates of systemic symptoms when compared with placebo injections.
• Immediate, presumably allergic, reactions (e.g., hives, angioedema, allergic asthma, and systemic anaphylaxis) rarely occur after influenza vaccination - (hypersensitivity to residual egg protein).

Guillain-Barré syndrome (GBS) and influenza

• The 1976 swine influenza vaccine was associated with an increased frequency of GBS. The rate of GBS was <10 cases/1 million persons vaccinated. The risk for influenza vaccine-associated GBS was higher among persons aged ≥25 years than persons aged <25 years.

•Evidence for a causal relation of GBS with subsequent vaccines prepared from other influenza viruses is unclear. Obtaining strong epidemiologic evidence for a possible limited increase in risk is difficult for such a rare condition as GBS, which has an estimated annual incidence of 10-20 cases/1 million adults

• Investigations to date have not documented a substantial increase in GBS associated with influenza vaccines, and suggest that, if influenza vaccine does pose a risk, it is probably slightly more than one additional case/1 million persons vaccinated.

• Substantial evidence exists that several infectious illnesses, most notably *Campylobacter jejuni* and upper respiratory tract infections are associated with GBS.

Farmaci Antivirali

- In the United States , four antiviral medications (**amantadine, rimantadine, oseltamivir, and zanamivir**) are approved for treatment of **influenza A viruses**.
- When used for treatment within the first 2 days of illness, all four antiviral medications are similarly effective in reducing the duration by 1 or 2 days of illness caused by **influenza A viruses**.
- Only three antiviral medications (**amantadine, rimantadine, and oseltamivir**) are approved in the United States for chemoprophylaxis of **influenza A viruses**. Only **oseltamivir** and **zanamivir** are effective against **influenza B viruses.**

Guidelines & recommendations Influenza Antiviral Medications: 2005-06 Chemoprophylaxis and Treatment Guidelines

Prevention and Control of influenza. Recommendations of the Advisory Committee on immunization practice (ACIP) MMWR July 28, 2006

In Italia sono in commercio solo amantadina (Mantadan®) e Zanamivir (Relenza®)

Adamantane Resistance Among Influenza A Viruses Isolated Early During the 2005-2006 Influenza Season in the United States

Rick A. Bright, PhD
David K. Shay, MD, MPH
Bo Shu, MD
Nancy J. Cox, PhD
Alexander I. Klimov, PhD

Context The adamantanes, amantadine and rimantadine, have been used as first-choice antiviral drugs against community outbreaks of influenza A viruses for many years. Rates of viruses resistant to these drugs have been increasing globally. Rapid surveillance for the emergence and spread of resistant viruses has become critical for appropriate treatment of patients.

Objective To investigate the frequency of adamantane-resistant influenza A viruses circulating in the United States during the initial months of the 2005-2006 influenza season.

Design and Setting Influenza isolates collected from 26 states from October 1 through December 31, 2005, and submitted to the US Centers for Disease Control and Prevention were tested for drug resistance as part of ongoing surveillance. Isolates were submitted from World Health Organization collaborating laboratories and National Respiratory and Enteric Virus Surveillance System laboratories.

Main Outcome Measures Using pyrosequencing and confirmatory assays, we identified viruses containing mutations within the M2 gene that are known to confer resistance to both amantadine and rimantadine.

Results A total of 209 influenza A(H3N2) viruses isolated from patients in 26 states were screened, of which 193 (92.3%) contained a change at amino acid 31 (serine to asparagine [S31N]) in the M2 gene known to be correlated with adamantane resistance. Two of 8 influenza A(H1N1) viruses contained the same mutation. Drug-resistant viruses were distributed across the United States.

Conclusions The high proportion of influenza A viruses currently circulating in the United States demonstrating adamantane resistance highlights the clinical importance of rapid surveillance for antiviral resistance. Our results indicate that these drugs should not be used for the treatment or prophylaxis of influenza in the United States until susceptibility to adamantanes has been reestablished among circulating influenza A isolates.

JAMA. 2006;295:891-894 www.jama.com

INFLUENZA A VIRUSES ARE A MAJOR cause of morbidity and mortality in the United States. They infect, on average, 10% to 15% of the population annually.[1,2] It has been estimated that influenza A viruses are associated with approximately 31 000 US deaths annually, with 90% of these deaths occurring among elderly persons.[3] Although annual vaccination is the primary strategy for preventing influenza infections, influenza antiviral drug therapy has been shown to be an effective means of preventing and treating influenza.

Two antiviral drugs, adamantane derivatives amantadine and rimantadine, licensed for antiviral indications in the United States in 1966 and 1993, respectively, are used for prophylaxis and treatment of influenza, especially for controlling outbreaks in settings such as

Farmaci Antivirali

- Any person experiencing a potentially life-threatening influenza-related illness should be treated with antiviral medications.
- Any person at high risk for serious complications of influenza and who is within the first 2 days of illness onset should be treated with antiviral medications.
- Data are limited and inconclusive concerning the effectiveness of **amantadine**, **rimantadine**, **zanamivir**, and **oseltamivir** for treatment of influenza among persons at high risk for serious complications of influenza
- To reduce the emergence of antiviral drug-resistant viruses, **amantadine** or **rimantadine** therapy for persons with influenza A illness should be discontinued as soon as clinically warranted, typically after 3--5 days of treatment or within 24--48 hours after the disappearance of signs and symptoms.
- The recommended duration of treatment with either zanamivir or oseltamivir is 5 days.

The NEW ENGLAND JOURNAL of MEDICINE

N ENGL J MED 353;13 WWW.NEJM.ORG SEPTEMBER 29, 2005

REVIEW ARTICLE

DRUG THERAPY

Neuraminidase Inhibitors for Influenza

Anne Moscona, M.D.

Table 1. Dosing Schedule of Neuraminidase Inhibitors for the Treatment and Prevention of Influenza, According to Patient's Age and Coexisting Illnesses.*

Antiviral Drug	Recommended Dose According to Age				Coexisting Illness	
	1–6 yr	7–12 yr	13–64 yr	≥65 yr	Renal Disease	Hepatic Disease
Treatment						
Zanamivir	NA	10 mg (equivalent to 2 inhalations) twice daily for 5 days	10 mg (equivalent to 2 inhalations) twice daily for 5 days	10 mg (equivalent to 2 inhalations) twice daily for 5 days	10 mg (equivalent to 2 inhalations) twice daily for 5 days	—
Oseltamivir	Weight <15 kg: 30 mg twice daily for 5 days; 15–23 kg: 45 mg twice daily for 5 days; >23–40 kg: 60 mg twice daily for 5 days; >40 kg: 75 mg twice daily for 5 days	Weight <15 kg: 30 mg twice daily for 5 days; 15–23 kg: 45 mg twice daily for 5 days; >23–40 kg: 60 mg twice daily for 5 days; >40 kg: 75 mg twice daily for 5 days	75 mg twice daily for 5 days	75 mg twice daily for 5 days	For adults, reduce dose if creatinine clearance is ≤30 ml/min; if creatinine clearance is 10–30 ml/min, 75 mg once daily†	Not evaluated
Prevention						
Oseltamivir	NA	NA	75 mg once daily for >7 days (up to 6 wk)	75 mg once daily for >7 days (up to 6 wk)	If creatinine clearance is 10–30 ml/min, 75 mg every other day†	Not evaluated

* The doses listed are those currently approved in the United States. NA denotes not applicable.

† No regimen is available for patients with end-stage renal disease.

CASO CLINICO

Uomo, di anni 79, proveniente da reparto di cardiochirugia.

Vive con la moglie in sostanziale autonomia funzionale

Anamnesi patologica remota

- 1960 gastrectomia per ulcera
- 1999 Ipertrofia prostatica benigna
- 2000 fratture costali dopo incidente stradale. In tale occasione riscontro di aneurisma di arco aortico; effettua controlli periodici
- 2005 ricovero in chirurgia vascolare per aneurisma di arco aortico Ø 72mm; aneurisma aorta addominale Ø 50 mm.

Effettua Angio RM [*" …restringimento del tratto post-bulbare dell'arteria carotide interna sx (stenosi del 75%) e del tratto bulbare della carotide interna dx (stenosi del 25%)…]*

- Programmato intervento.

CASO CLINICO

Anamnesi patologica prossima

Giunge alla nostra osservazione inviato dal reparto di cardiochirugia dove, in data XX/11/05, è stato sottoposto ad intervento di endoprotesi di arco aortico per aneurisma e TEA carotide sx per stenosi severa ACI sx. decorso post-operatorio caratterizzato da anemia (emotrasfuso) ed episodio di FA trattato con beneficio con amiodarone.

Affetto da:

- Recente intervento di endoprotesi di arco aortico per aneurisma +TEA carotide sx per stenosi severa ACI sx (XX/11/05) complicato da episodio di fibrillazione atriale convertito farmacologicamente (Amiodarone)
- Ipertensione arteriosa stadio I gruppo di rischio elevato
- Aneurisma dell'aorta addominale sottorenale
- Ipertrofia prostatica benigna
- Esiti di gastrectomia per ulcera ('60)

VALUTAZIONE MULTIDIMENSIONALE

		PREMORBOSO	INGRESSO
C.A.M.	Stato confusionale		0/4
MMSE	Stato cognitivo		25/30
GDS	Tono dell'umore		5/15
IADL (funz. Perse)	Stato funzionale	0/5	-
Barthel Index	Stato funzionale	100/100	56/100
Tinetti	Stato funzionale		14/28
FIM	Stato funzionale		57/126

Terapia all'ingresso

Nome commerciale	Principio attivo	posologia
Amiodar 200	amiodarone	1 cp die
Mepral 20	Omeprazolo	1 cp die
Lasix 25 mg	furosemide	2 cp die
Ascriptin	ASA	1 cp die
Norvasc 5	amlodipina	1 cp die
Tavor 1	lorazepam	1 cp die

Decorso Clinico

Per le prime due settimane le condizioni cliniche si sono mantenute stabili ed il paziente ha eseguito il programma riabilitativo individualizzato che ha incluso esercizi di mobilizzazione attiva assistita ai 4 arti, di rieducazione all'equilibrio statico e dinamico, ai passaggi posturali ed alla deambulazione per brevi tratti. Successivamente ha svolto training di riallenamento allo sforzo con monitoraggio dei parametri con intensità e durata di lavoro crescenti. La risposta clinica ed emodinamica è stata soddisfacente ed il paziente ha raggiunto una buona tolleranza allo sforzo con carico medio-elevato. Sono stati rimossi gli elettrodi ed i punti di sutura (ferita in ordine).

RX torace di routine: *Stasi vascolare con accentuazione degli ili. Non focolai broncopneumonici, non versamenti pleurici. Esiti di recente intervento di endoprotesi arco aortico*

Decorso Clinico

18° giornata

Il paziente riferisce faringodinia, tosse secca, malessere e dolori articolari diffusi. T 37.6. EO toracico negativo. Parametri nella norma.
OD) sindrome influenzale

19°giornata

Tosse scarsamente produttiva, PA 130/70; FC 96 bpm; SO2 98%; T 38.2°
Inizia paracetamolo 500 x 3

21° giornata

Permane tosse produttiva, escreato biancastro. FR 28 atti/min. riferita dispnea dopo sforzi minimi. SO2 85% PA 120/80. Esegue EMOGAS:
pH 7.46; pCO2 **44**; pO2 **43**; HCO3 31
All'EO: crepitii e rantoli a piccole bolle soprattutto a dx.
® Rx torace + esami ematochimici
inizia O2 terapia 1 L /min

Decorso Clinico

RX torace: "*Campi polmonari normoespansi.* ***In sede mediotoracica ed apicale dx*** *riduzione della trasparenza del parenchima polmonare per presenza di* ***multiple sfumate chiazzette addensative****. Esiti di pregresso intervento chirurgico per aneurisma dell'arco aortico*"

In visione esami ematochimici.

D] polmonite dx

Attualmente il paziente è apiretico. Parametri nella stabilità clinica.

Inizia Levofloxacina 500 per os.

Alla dimissione buono il controllo del compenso emodinamico e della PA. Il paziente deambula in autonomia senza ausili. Lieve insicurezza nei cambi di direzione. Utile rivalutazione a distanza dell'indicazione a continuare terapia con amiodarone.

TERAPIA

Amiodar	*amiodarone*	1 c	ore 8
Ascriptin	*Asa*	1 b	a pranzo
Enapren 20	*enalapril*	1 c	ore 18

(Sospeso omeprazolo, lorazepam, furosemide e amlodipina)

Esami ematochimici

Esame	Ingresso	20°		Valori normali
GB	7.9	**10.1**	10^3/ul	4.00-9.00
GR	**3.7**	**3.6**	10^6/ul	4.00-5.50
Ht	37.0	35.5	%	38.0-50.0
Hb	12.3	11.8	g/dl	11.5-14.5
MCV	98.1	98.6	Fl	80.0-95.0
PLT	391	389	10^3/ul	150-400
Neutrofili	**81.4**	**83.7**	% * 10^3/ul	40.0-75.0
Linfociti	8.9	8.6	% * 10^3/ul	0.80-4.00
Monociti	7.2	5.5	% * 10^3/ul	0.0-12.0
Eosinofili	1.8	1.4	% * 10^3/ul	0.0-2.5
Basofili	0.7	0.5	% * 10^3/ul	0.0-0.54
Sideremia	**28**		microg/dl	70-150
Transferrina	222		Mg/dl	200-350
VES	**45**	**96**	mm/1° ora	0-20
PCR	**2.8**	**9.6**	mg/dl	0.0-1.0
Azotemia	41	**64**	mg/dl	10-50
Creatinina	1.2	1.17	mg/dl	0.5-1.2
Ac. Urico	7.7		mg/dl	1.5-7.0

Esame	Ingresso	20°		Valori normali
Na	138	148	Mmol/L	136-146
K	4.0	4.9	Mmol/L	3.5-5.10
Cl	96	105	Mmol/L	98-108
Glicemia	71		mg/dl	60-110
Colesterolo tot	168		mg/dl	120-200
HDL	30			
Trigliceridi	138		mg/dl	40-160
GOT	13		U/L	0-40
GPT	8		U/L	0-40
Fosfatasi alc	212		U/L	90-270
γGT	91		UI/L	5-30
Bilirubina tot	0.6		mg/dl	0-1.2
PT (INR)	1.1			0.9-1.1
proteine tot	7.3		g/dl	6.2-8.2
albumina	**43.8 (3.2)**		%	55.1-66.1
α1	6.4		%	1.7-3.3
α2	11.0		%	8.2-13-0
β	14.2		%	9.5-15-0
γ	24.8		%	10.3-18.3

VALUTAZIONE MULTIDIMENSIONALE

		PREMORBOSO	INGRESSO	DIMISSIONE
C.A.M.	Stato confusionale		0/4	0/4
MMSE	Stato cognitivo		25/30	26/30
GDS	Tono dell'umore		5/15	--/15
IADL (funz. Perse)	Stato funzionale	0/5	-	-
Barthel Index	Stato funzionale	100/100	56/100	81/100
Tinetti	Stato funzionale		14/28	22/28
FIM	Stato funzionale		57/126	115/126

Diagnosi di dimissione

Recente intervento di endoprotesi di arco aortico per aneurisma + TEA carotide sx (XX/11/05) per stenosi severa ACI sx
Recente fibrillazione atriale convertita farmacologicamente
Ipertensione arteriosa stadio I gruppo di rischio elevato
Polmonite dx intercorrente
Aneurisma dell'aorta addominale sottorenale (Ø 50 mm)
Esiti di gastrectomia per ulcera ('60)
Ipertrofia prostatica benigna

Terapia alla dimissione

Nome commerciale	Principio attivo	posologia
Ascriptin	**ASA**	**1 cp die**
Enapren 20	**enalapril**	**1 cp die**
Amiodar 200	**amiodarone**	**1 cp die**

Commento

- Paziente fragile?
- E’ stata la polmonite una complicanza dell’influenza?
- Il paziente ha superato la polmonite
- Il paziente era già stato vaccinato: che significa? Ruolo del vaccino nell’esito fausto?
- Non viene solitamente fatta la diagnosi di influenza
- Segnalazione x sorveglianza epidemiologica e virologica

Ministero della Salute | Istituto Superiore di Sanità

Centro Interuniversitario di Ricerca sull'Influenza

InfluNet
Rete Italiana Sorveglianza Influenza

PROTOCOLLO OPERATIVO

Sorveglianza Epidemiologica e Virologica
Stagione influenzale 2006 - 2007

www.flu.iss.it

Dati individuali di nuovi casi di "sindrome influenzale" da annotare giornalmente nella settimana:

11 dicembre 2006 - 17 dicembre 2006

Settimana di riferimento 2006-50

Iniziali Paziente	Età	0- 4	5-14	15-64	65 e oltre Vaccinato	
					Si	*No*
AL	3	X				
MR	0	X				
FR	45			X		
CD	23			X		
PD	78					

Istruzioni per la compilazione:

Il foglio va compilato dal medico giornalmente man mano che osserva i casi di influenza.

La casella "iniziali" ha solo lo scopo di ricordare al medico di evitare che si registri più di una volta lo stesso caso.

Alla fine della settimana bisogna contare il numero dei casi in ogni colonna e riportare i totali nelle caselle riepilogative poste in basso al modulo stesso (seconda pagina). La casella "numero vaccinati di anni 65 e oltre" deve contenere il n° totale dei casi in pazienti ultrasessantaquattrenni che sono stati vaccinati cioè il n° totale dei casi che hanno una X sia nella colonna "65 e oltre" e Vaccinato = Si.

I casi di influenza da segnalare sono solo quelli che si osservano tra i propri assistiti.

Per vaccinato si intende solo chi è stato vaccinato per l'anno in corso da almeno due settimane.

CONCLUSIONI

L'influenza è una malattia virale potenzialmente letale e la sua virulenza dipende da:

- Lo stato antigenico del virus (che si può contrastare prevedendo e preparando vaccini adeguati per l'anno in corso)

- Lo stato "immunitario" dell'ospite, a sua volta condizionato da molti fattori, quali: età, comorbilità, stato funzionale, cognitivo, etc ("care geriatrica")

CONCLUSIONI

- **La riduzione della mortalità può essere raggiunta con una vaccinazione adeguata (soprattutto in soggetti tra > 85 anni)**

- **La riduzione della mortalità può essere raggiunta con una prevenzione adeguata delle comorbilità (soprattutto in soggetti tra 65 ed 85 anni)**

- **Ma spesso l'influenza, con le sue complicanze (polmonite) rappresenta una sorta di Falce della Morte che porta via i pazienti più biologicamente e funzionalmente compromessi.**

“Principiis Obsta!”
opponiti agli inizi

Ovidio

Remedia Amoris V,91

Principio basilare della medicina antica secondo cui per sconfiggere un male è necessario affrontarlo nella fase iniziale