Louisiana

DEPARTMENT OF HEALTH AND HUMAN RESOURCES
OFFICE OF HEALTH SERVICES AND ENVIRONMENTAL QUALITY
BOX 60630 NEW ORLEANS, LOUISIANA 70160

# MONTHLY MORBIDITY REPORT

***Provisional Statistics***

*from*

## EPIDEMIOLOGY UNIT AND PUBLIC HEALTH STATISTICS

Reported Morbidity
August, 1980

## TOXIC-SHOCK SYNDROME — SUMMARY

### CASE REPORT

Earlier this summer on the fourth day of her menstrual period, a previously healthy 16 year old white Louisiana female experienced a sudden onset of shaking chills, fever, diffuse myalgia, vomiting and diarrhea. Upon examination in an emergency room on the third day of her illness she was found to have a temperature of 104°F. She had an evanescent macular rash on her trunk and extremities, conjunctival suffusion, hepatomegaly, peripheral edema and muscle tenderness. The patient was in mild shock and her hypotension was treated with volume replacement. She was admitted to a New Orleans area hospital.

Laboratory evaluation revealed a white-cell count of 8600 per cubic millimeter with 34% polymorphonuclear leukocytes, 52% juvenile forms, 10% metamyelocytes and 4% lymphocytes. The urinalysis was remarkable for mild proteinuria. The BUN was 41 mg/dl and creatinine was 4.0 mg/dl. Several days after admission the BUN had risen to 137 mg/dl and the creatinine to 8.6 mg/dl. The bilirubin

**(continued on page 2)**

## BULLETIN

### INFLUENZA VACCINE 1980-81

Louisiana's influenza vaccination and surveillance program has been approved and will begin in September 1980. Influenza virus infections vary greatly each year in incidence and geographic distribution and are capable of producing wide spread outbreaks of febrile respiratory disease. During the past year the predominant strain seen in the United States was B/Singapore/79 and was associated with excess mortality. Major influenza A isolates were of $H_3N_2$ subtype, similar to A/Bangkok/79, and $H_1N_1$ A/Brazil/78 - like viruses. Hence, the vaccine for the present season will consist of inactivated trivalent preparations of these three antigens and will be administered according to the following recommendations. Because of lack of previous contact with $H_1N_1$ strains, individuals less than 28 years of age who did not receive the vaccine during the previous two seasons will require 2 doses of the 1980-81 vaccine. Although the vaccine will be available as whole virion and subvirion (split virus) preparations, only the latter are recommended for persons under age 13.

Annual influenza vaccination is recommended for older persons (over 65) and for all individuals at increased risk of adverse consequences from infections of the lower respiratory tract. Conditions predisposing to such risk include acquired or congenital heart disease associated with altered circulatory dynamics, chronic pulmonary dysfunction, chronic renal disease, diabetes mellitus and other metabolic disorders predisposing to infection, chronic anemia, and immune deficiency states. There has been no evidence to suggest that influenza vaccination of pregnant women poses any special maternal or fetal risk; thus, pregnant females should be evaluated for vaccination according to the same criteria applied to other individuals. Present influenza vaccines have been associated with few side effects. These include local reactions, infrequent systemic symptoms of toxicity attributed to the inactivated virus itself and rare hypersensitivity reactions in persons with allergy to egg protein.

Influenza vaccine will be available, free of charge, to all eligible persons (high risk youth and elderly population as well as those over 65 as outlined above) through the Parish Health Units. Individuals may also be vaccinated through their private physicians. Any questions relating to the influenza vaccination program should be directed to the Division of Disease Control, Vaccine Preventable Disease Unit (504-568-5005).

level was 2.8 mg/dl, serum glutamic oxalacetic transaminase level 73 units/liter, albumin level 2.8 gm/dl, total calcium level 7.5 mg/dl and the creatine phosphokinase level was 258 International units per liter. The platelet count was 64,000 per cubic millimeter and subsequently fell to 39,000.

After cultures of blood, urine, throat, stool and cervix were obtained, a cephalosporin and gentamicin were begun. The endocervical culture grew *Staphylococcus aureus* and all other cultures yielded no organisms. Viral serologies were negative; agglutinins to leptospirosis were negative. Total hemolytic complement, antinuclear antibodies and latex fixation titers were normal. A Raja cell assay was negative for circulating immune complexes. Teichoic acid antibodies were negative on two occasions.

With the endocervical growth of *S. aureus*, a diagnosis of Toxic Shock Syndrome was made and antibiotic coverage was changed to high-dose oxacillin. Further questioning revealed that the patient used tampons continuously during her menstrual period. She recovered without complications and on the seventh day of her illness desquamation began on her soles and palms. A repeat endocervical culture just prior to discharge was negative for *S. aureus*. After 17 days of hospitalization the patient's renal and hepatic function had normalized and she was discharged.

## CLINICAL DESCRIPTION

Three similar cases have been reported to the Division of Disease Control, one of which has experienced a recurrence. Toxic-Shock Syndrome (TSS) was first described by Todd, et al.[1] at the University of Colorado and has recently been investigated and defined by the CDC.[2,3] TSS typically begins suddenly with fever, rigors, vomiting and watery diarrhea and may be accompanied by pharyngitis, headache and diffuse myalgias. Hypotensive shock occurs within 72 hours. Characteristically the patient develops a diffuse, blanching, macular, nonpapular erythematous rash. TSS can be distinguished from Kawasaki disease and scarlet fever by the hypotension and shock and from meningococcemia and Rocky Mountain Spotted Fever by the character of the rash. There is often mucus membrane involvement with pharyngeal, conjunctival or vaginal hyperemia.

Laboratory studies often reveal leukocytosis with marked left shifts, abnormal urinary sediments, hyponatremia, elevated creatine phosphokinase levels, marked hypocalcemia and abnormal renal and hepatic function. Most patients have thrombocytopenia although petechiae are uncommon.

Patients require large volumes of fluid and often vaso-

Table I

**TOXIC–SHOCK SYNDROME CASE DEFINITION**

1. Fever (temperature $\geq$ 38.9°C).
2. Rash (diffuse macular erythroderma).
3. Desquamation of palms and soles 1-2 weeks after onset of illness.
4. Hypotension (systolic blood pressure $\leq$ 90 mm Hg for adults or $<$ 5th percentile by age for children $<$ 16 years of age, orthostatic drop in diastolic blood pressure $\geq$ 15 mm Hg from lying to sitting, or orthostatic syncope).
5. Multisystem involvement (3 or more of the following):
   - A. Gastrointestinal (vomiting or diarrhea at onset of illness).
   - B. Muscular (severe myalgia or CPK $\geq$ 2 x ULN*).
   - C. Mucus membrane (vaginal, orophoryngeal or conjunctival).
   - D. Renal (BUN or Cr $\geq$ 2 x UNL* or urinary sediment with $>$ 5 WBC/HPF in the absence of a UTI).
   - E. Hepatic (total bilirubin, SGOT or SGPT $\geq$ 2 x ULN*).
   - F. Hematologic (platelets $\leq$ 100,000/mm$^3$).
   - G. Central Nervous System (disorientation or alterations in consciousness with focal neurologic signs in absence of fever and hypotension).
   - H. Negative results of following tests, if obtained:
     - (1). Blood, throat or CSF cultures.
     - (2). Rise in titer to Rocky Mountain Spotted Fever, Leptospirosis or Rubeola.

* 2 x ULN = twice upper limits of normal for laboratory.

pressors to maintain perfusion. Recovery begins in seven to ten days and desquamation generally begins in one to two weeks, most prominently on the palms and soles although other skin areas may be involved. Adult respiratory distress syndrome, cardiac dysfunction (pericarditis) and central nervous system abnormalities have been associated with TSS. The case definition as outlined by CDC appears in Table I.

## EPIDEMIOLOGY

Since October 1979 more than 200 cases of TSS have been reported to CDC; the large number of recent reports appears to represent more than recognition or recall artifact. Of reported cases, 95% have been in women aged 12 to 52 during their menstrual period. The mean age is 24.8 years and the case-fatality rate in the first 55 cases recorded was 13%.[2] Because of the striking correlation with menses CDC undertook a case-control study to determine risk factors associated with TSS.[3] Illness began an average of 3.8 days from the onset of menstrual period. Fifty-two of 52 (100%) case-women used tampons as compared to 44 of 52 (85%) control-women ($p < 0.02$). Among case-control pairs who used tampons, more cases than control used tampons continuously while menstruating ($p < 0.05$). No significant differences have been found between patients and controls in brand of tampon used, absorbency of tampon used, use of deodorized tampons or frequency of sexual intercourse.

Significantly fewer case-women (31%) than control-women (47%) used contraceptives ($p < 0.05$) suggesting a protective effect. Of 44 women who have had at least one period since their first episode of TSS, 14 (32%) have had at least one recurrence. The median time from initial episode to first recurrence was two months and five women have had multiple recurrences. Generally, repeat episodes have been less severe. A Wisconsin study suggests that those treated with penicillinase resistent antibiotics during their first episode of TSS were less likely to have recurrences than those not so treated ($p = 0.02$).[3]

Early data has implicated *Staphylococcus aureus* in the pathogensis of this syndrome.[1] In the most recent study, of 17 vaginal cultures performed prior to antibiotic therapy, 16 (94%) were positive for *S. aureus*. All of 5 isolates submitted to CDC were resistent to penicillin and ampicillin and a variety of phage-typing patterns have been found. In most studies of normal vaginal flora *S. aureus* has been present in less than 5% of instances; however, these cultures were not obtained during the menstrual period. The lack of association between TSS and a particular brand or constituent of tampon makes it unlikely that *S. aureus* is introduced by a contaminated tampon and suggests that the tampon acts as a cofactor.

## RECOMMENDATIONS

Because of the association of tampons with the development of TSS in menstruating women, the following recommendations are offered by CDC for physicians whose patients inquire about tampon use:

1. Women who have not had TSS have a low risk of developing it (3.3 per 100,000 menstruating women) and probably do not need to change their patterns of tampon use; however, if they want to reduce an already small risk, they might use tampons for only part of the day or night or for only part of the menstrual period or use napkins or minipads instead.

2. Women who have had TSS are at considerable risk of having recurrences and should not use tampons for several menstrual cycles after their illness unless, perhaps, *S. aureus* has been eradicated from the vagina.

Additionally, routine culturing of asymptomatic women for *S. aureus* is not warranted in view of the low risk of TSS in general. Patients with TSS should be treated with a beta - lactamase resistent antibiotic after appropriate cultures (vaginal or endocervical, blood, anterior nares, urine, stool) have been obtained. Although there is no documentation that these drugs ameliorate the disease or improve outcome, there is evidence that they prevent recurrences.

A prospective case-control study is now in progress by CDC in consultation with the Food and Drug Administration. Although Toxic Shock Syndrome is not an officially reportable disease in Louisiana, we urge that all suspected cases be reported to the Division of Disease Control (504-568-5005) and that cultures for staphylococci be obtained.

## REFERENCES


1. Todd J., Fishout M., Kapral F., Welch T. Toxic-Shock Syndrome Associated with Phage-Group-I Staphylococci. Lancet 1978:2 1116-8.
2. MMWR 1980; 29: 229-30.
3. MMWR 1980; 29: 297-99.

# SELECTED REPORTABLE DISEASES
## (By Place of Residence)

| STATE AND PARISH TOTALS<br>Reported Morbidity August, 1980 | VACCINE PREVENTABLE DISEASES | | | | | ASEPTIC MENINGITIS | HEPATITIS A AND UNSPECIFIED | HEPATITIS B | LEGIONNAIRES DISEASE | MALARIA** | MENINGOCOCCAL INFECTIONS | SHIGELLOSIS | TUBERCULOSIS, PULMONARY | TYPHOID FEVER | OTHER SALMONELLOSIS | UNDERNUTRITION SEVERE | GONORRHEA | SYPHILIS, PRIMARY AND SECONDARY | RABIES IN ANIMALS (PARISH TOTALS CUMULATIVE, 1980) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | MEASLES | RUBELLA* | MUMPS | PERTUSSIS | TETANUS | | | | | | | | | | | | | | |
| TOTAL TO DATE 1979 | 248 | 27 | 31 | 15 | 2 | 74 | 470 | 171 | 2 | 3 | 115 | 73 | 376 | 4 | 105 | 8 | 15116 | 662 | 20 |
| TOTAL TO DATE 1980 | 11 | 10 | 65 | 23 | 2 | 55 | 555 | 194 | 1 | 42 | 65 | 183 | 323 | 0 | 86 | 6 | 15284 | 875 | 7 |
| TOTAL THIS MONTH | 0 | 0 | 0 | 14 | 0 | 10 | 77 | 38 | 0 | 3 | 4 | 21 | 49 | 0 | 31 | 4 | 1717 | 152 | 0 |
| ACADIA | | | | | | | 1 | 2 | | | | | 2 | | | | 13 | | |
| ALLEN | | | | | | | | | | | | | | | | | 1 | | |
| ASCENSION | | | | | | | | | | | | | | | | 4 | 6 | 4 | |
| ASSUMPTION | | | | | | | | | | | | | | | | | 9 | | |
| AVOYELLES | | | | | | | 2 | | | | | | 1 | | | | 12 | 2 | 1 |
| BEAUREGARD | | | | | | | 2 | | | | | | 1 | | | | 7 | | |
| BIENVILLE | | | | | | | | | | | | | | | | | 4 | 1 | |
| BOSSIER | | | | | | 1 | 2 | 1 | | | | | 1 | | | | 24 | | |
| CADDO | | | | | | 1 | 3 | 2 | | | | 4 | 1 | | 7 | | 213 | 2 | 3 |
| CALCASIEU | | | | 3 | | | 1 | | | | | | 3 | | 1 | | 101 | 3 | |
| CALDWELL | | | | | | | | | | | | | | | | | | | |
| CAMERON | | | | | | | | | | | | | | | | | 3 | | |
| CATAHOULA | | | | | | | | | | | | | | | | | 8 | | |
| CLAIBORNE | | | | | | | | | | | | | | | | | 1 | | |
| CONCORDIA | | | | | | | 4 | | | | | | | | | | 6 | | |
| DESOTO | | | | | | | 1 | 1 | | | | | 1 | | | | 1 | | |
| EAST BATON ROUGE | | | | 2 | | | 4 | 1 | | | | | 1 | | | | 137 | 22 | |
| EAST CARROLL | | | | | | | 1 | | | | | | | | | | 2 | 2 | |
| EAST FELICIANA | | | | | | | | | | | | | | | | | | 2 | |
| EVANGELINE | | | | | | | | | | | | | 2 | | 2 | | 1 | 2 | |
| FRANKLIN | | | | | | | 2 | | | | | | | | | | 10 | | |
| GRANT | | | | | | | | | | | | | | | | | 6 | | |
| IBERIA | | | | | | | 1 | | | | | | 1 | | | | 8 | 2 | |
| IBERVILLE | | | | | | | | | | | 1 | | | | | | 3 | 1 | |
| JACKSON | | | | | | | | | | | | | | | | | | | |
| JEFFERSON | | | | 2 | | 3 | 10 | 3 | | | | 3 | 4 | | 3 | | 109 | 16 | |
| JEFFERSON DAVIS | | | | | | | 1 | 2 | | | | | 1 | | | | 13 | | |
| LAFAYETTE | | | | 1 | | 1 | 4 | 5 | | 1 | 1 | | | | | | 20 | 2 | |
| LAFOURCHE | | | | | | | | | | | | | | | | | 18 | | |
| LASALLE | | | | | | | | | | | | | | | | | 2 | | |
| LINCOLN | | | | | | | | | | | | | 1 | | | | 5 | 1 | |
| LIVINGSTON | | | | 1 | | | | 1 | | | | 1 | | | 1 | | 4 | | |
| MADISON | | | | | | | | | | | | | | | | | 9 | | |
| MOREHOUSE | | | | | | | 1 | 1 | | | | | | | | | 15 | | |
| NATCHITOCHES | | | | | | | | | | | | | | | | | | | |
| ORLEANS | | | | 2 | | 2 | 8 | 12 | | 1 | | 6 | 13 | | 1 | | 604 | 52 | |
| OUACHITA | | | | | | 1 | 9 | 1 | | | | 1 | | | 3 | | 80 | 4 | |
| PLAQUEMINES | | | | | | | | | | | | | 2 | | | | 3 | | |
| POINTE COUPEE | | | | | | | | | | | | | | | | | 1 | | |
| RAPIDES | | | | | | | 1 | | | | | | 2 | | 5 | | 38 | 5 | |
| RED RIVER | | | | | | | | | | | | | | | | | | | 1 |
| RICHLAND | | | | | | | | | | | | | | | | | 8 | 1 | |
| SABINE | | | | | | | | 1 | | | | | | | | | 1 | 3 | |
| ST. BERNARD | | | | | | | | | | | | | | | | | 6 | 2 | |
| ST. CHARLES | | | | | | | | 2 | | | | | 1 | | | | 6 | | |
| ST. HELENA | | | | | | | | | | | | | | | | | 2 | | |
| ST. JAMES | | | | | | | | | | | | | | | | | 3 | | |
| ST. JOHN | | | | | | | | | | | | | | | | | 8 | 1 | |
| ST. LANDRY | | | | | | | 1 | | | | | | 3 | | | | 5 | 2 | |
| ST. MARTIN | | | | | | | 2 | 1 | | | 1 | 1 | 1 | | | | 7 | 1 | |
| ST. MARY | | | | | | | | | | | | 1 | 2 | | 1 | | 5 | | |
| ST. TAMMANY | | | | | | | 4 | | | | | | | | | | 21 | | |
| TANGIPAHOA | | | | | | | 5 | | | | | | 2 | | 1 | | 50 | 1 | |
| TENSAS | | | | | | | | | | | | | | | | | 1 | | |
| TERREBONNE | | | | 3 | | 1 | 5 | | | 1 | | 3 | | | 3 | | 28 | | |
| UNION | | | | | | | | | | | | | | | | | 23 | 1 | |
| VERMILION | | | | | | | 1 | | | | | 1 | 2 | | 2 | | 1 | | |
| VERNON | | | | | | | 1 | | | | | | | | | | 6 | 11 | |
| WASHINGTON | | | | | | | | | | | | | | | | | 4 | 4 | |
| WEBSTER | | | | | | | | 1 | | | 1 | | | | | | 9 | | 2 |
| WEST BATON ROUGE | | | | | | | | | | | | | 1 | | | | 5 | 1 | |
| WEST CARROLL | | | | | | | | 1 | | | | | | | 1 | | 3 | | |
| WEST FELICIANA | | | | | | | | | | | | | | | | | 1 | 1 | |
| WINN | | | | | | | | | | | | | | | | | 1 | | |
| OUT OF STATE | | | | | | | | | | | | | | | | | 16 | | |

* Includes Rubella, Congenital Syndrome.
** Acquired outside United States unless otherwise stated.

From January 1, 1980 through August 31, 1980, the following cases were also reported:
3 - Leptospirosis; 3 - Brucellosis; 1 - Blastomycosis; 1 - Cryptococcosis;
26 - Trichinosis; 1 - poliomyelitis, non-paralytic; 2 - Rocky Mountain Spotted Fever.

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