

CHAPTER V

RESULTS

A study was conducted to obtain the profile of tetanus patients seeking treatment at RSUD dr. SAIFUL ANWAR, Malang in the period of 2008 - 2010. Data of all the risk factors for tetanus disease collected from the medical records of tetanus patients seeking treatment at RSUD dr. SAIFUL ANWAR, Malang in the period of 2008 -2010 are presented in tables. The table below shows the number of tetanus cases based on focal infection (primary infection) in the period of 2008 - 2010.

Table 5.1 Number of tetanus cases based on focal infection (primary infection) in the period of 2008 - 2010.

| Focal Infection | Number of cases | | | | | |
|---------------------|-----------------|------|-----------------|------|-----------------|------|
| | N = 68 2008 | | N = 112 2009 | | N = 103 2010 | |
| | | % | | % | | % |
| Neck, body and head | 2 | 2.9 | 8 | 7.0 | 7 | 6.8 |
| Hands | 7 | 10.3 | 15 | 13.4 | 13 | 12.6 |
| Legs | 54 | 79.4 | 89 | 79.5 | 83 | 81.0 |

The highest number of focal infection for the patients diagnosed with tetanus is infection through the legs which recorded 54 (79.4%) cases in 2008, 89 (79.5%) cases in 2009 and 83 (81.0%) cases in 2010. Meanwhile, the lowest number of focal infection is through the neck, body and head, which recorded 2 (2.9%) cases in 2008, 8 (7.0%) cases in 2009 and 7 (6.8%) cases in 2010. The

table below shows the number of tetanus cases based on cause of infection in the period of 2008 – 2010.

Table 5.2 Number of cases based on cause of infection in the period of 2008 – 2010

| Cause of infection | Number of cases | | | | | |
|--------------------|-----------------|------|---------|------|---------|------|
| | N = 68 | | N = 112 | | N = 103 | |
| | 2008 | % | 2009 | % | 2010 | % |
| Trauma | 3 | 4.4 | 5 | 4.5 | 1 | 1.0 |
| Cuts/puncture | 46 | 67.6 | 81 | 72.3 | 89 | 86.4 |
| Unknown | 19 | 28.0 | 26 | 23.2 | 13 | 12.6 |

Cuts or puncture as the cause of infection, recorded the highest among the tetanus patients which was 46 (67.6%) cases in 2008, 81 (72.3%) cases in 2009 and 89 (86.4%) cases in 2010. Nevertheless, infection due to trauma recorded the lowest which was 3 (4.4%) cases in 2008, 5 (4.5%) cases in 2009 and 1 (1%) case in 2010. The table below shows the number of tetanus cases based on incubation time in the period of 2008 – 2010.

Table 5.3 Number of tetanus cases based on incubation time in the period of 2008 – 2010.

| Incubation time | Number of cases | | | | | |
|-----------------|-----------------|------|---------|------|---------|------|
| | N = 68 | | N = 112 | | N = 103 | |
| | 2008 | % | 2009 | % | 2010 | % |
| < 48 hours | - | - | - | - | - | - |
| 2-5 days | - | - | - | - | - | - |
| 6-10 days | 42 | 61.8 | 64 | 57.1 | 59 | 57.3 |
| 11-14 days | 21 | 30.9 | 40 | 35.7 | 35 | 34.0 |
| >14 days | - | - | 1 | 0.9 | 1 | 1.0 |
| Unknown | 5 | 7.4 | 7 | 6.3 | 8 | 7.8 |



The highest number of tetanus patients based on incubation time is between 6 -10 days which recorded 42 (61.8%) cases in 2008, 64 (57.1%) cases in 2009 and 59 (57.3%) cases in 2010. Nevertheless, the lowest number of tetanus patients recorded based on incubation time is 0 (0%) cases for less than 48 hours and between 2 to 5 days in all three years. The table below shows the number of tetanus cases based on age distribution in the period of 2008 – 2010.

Table 5.4 Number of cases based on age distribution in the period of 2008 – 2010

| Age Distribution | Number of cases | | | | | |
|----------------------|-----------------|------|-----------------|------|-----------------|------|
| | N = 68 2008 | | N = 112 2009 | | N = 103 2010 | |
| | | % | | % | | % |
| Children (≤ 18years) | 5 | 7.4 | 12 | 10.7 | 13 | 12.6 |
| Adult (19-59 years) | 46 | 67.6 | 61 | 54.5 | 68 | 66.0 |
| Elderly (≥ 60 years) | 17 | 25.0 | 39 | 34.8 | 22 | 21.4 |

The highest number of tetanus patients based on age distribution is adults (19-59 years), which recorded 46 (67.6%) cases in 2008, 61 (54.5%) cases in 2009 and 68 (66.0%) cases in 2010. Meanwhile, the children (≤18 years), age distribution recorded the lowest number of tetanus patients which is 5 (7.4%) cases in 2008, 12 (10.7%) cases in 2009 and 13 (12.6%) cases in 2010. The Table below shows the number of tetanus cases based on gender in the period of 2008 – 2010.

Table 5.5 Number of cases based on gender in the period of 2008 – 2010

| Gender | Number of cases |
|--------|-----------------|
|--------|-----------------|

| | N = 68 | | N = 112 | | N = 103 | |
|--------|--------|------|---------|------|---------|------|
| | 2008 | % | 2009 | % | 2010 | % |
| Male | 61 | 89.7 | 75 | 67.0 | 82 | 79.6 |
| Female | 7 | 10.3 | 27 | 24.1 | 21 | 20.4 |

The highest number of tetanus patients is males which recorded 61 (89.7%) cases in 2008, 75 (67.0%) cases in 2009 and 82 (79.6%) cases in 2010. Meanwhile, lowest number of patients based on gender is females which recorded 7 (10.3%) cases in 2008, 27 (24.1%) cases in 2009 and 21 (20.4%) cases in 2010. The table below shows the Number of cases based on clinical severity in the period of 2008 – 2010.

Table 5.6 Number of cases based on clinical severity in the period of 2008 – 2010

| Clinical Severity | Number of cases | | | | | |
|-------------------|-----------------|------|---------|------|---------|------|
| | N = 68 | | N = 112 | | N = 103 | |
| | 2008 | % | 2009 | % | 2010 | % |
| Mild Tetanus | 7 | 10.3 | 13 | 11.6 | 9 | 8.7 |
| Moderate Tetanus | 38 | 55.9 | 57 | 50.9 | 59 | 57.3 |
| Severe Tetanus | 23 | 33.8 | 42 | 7.5 | 35 | 34.0 |

Patients with moderate tetanus recorded the highest number which was 38 (55.9%) cases in 2008, 57 (50.9%) cases in 2009 and 59 (57.3%) cases in 2010. Meanwhile, patients with mild tetanus recorded the lowest number which was 7 (10.3%) cases in 2008, 13 (11.6%) cases in 2009 and 9 (8.7%) cases in 2010. The table below shows the number of cases based on cause of death in the period of 2008 – 2010.

Table 5.7 Number of cases based on cause of death in the period of 2008 – 2010

| Cause of Death | Number of cases | | | | | |
|---------------------|-----------------|------|--------|------|--------|------|
| | N = 28 | | N = 48 | | N = 46 | |
| | 2008 | % | 2009 | % | 2010 | % |
| Sepsis | 10 | 35.7 | 17 | 35.4 | 19 | 41.3 |
| Respiratory Failure | 14 | 50.0 | 19 | 39.6 | 20 | 43.5 |
| Pneumonia | - | - | 3 | 6.3 | 1 | 2.2 |
| Unknown | 4 | 14.3 | 9 | 18.7 | 6 | 13.0 |

Respiratory failure is the highest cause of death on tetanus patients, which recorded 14 (50%) cases in 2008, 19 (39%) cases in 2009 and 20 (43.5%) cases in 2010. Nevertheless, Pneumonia is the lowest cause of death on tetanus patients which recorded 0 (0%) cases in 2008, 3 (6.3%) cases in 2009 and 1 (2.2%) case in 2010. The table below shows the Number of cases based on treatment received in the period of 2008 – 2010.

Table 5.8 Number of cases based on treatment received in the period of 2008 – 2010

| Treatment | Number of cases | | | | | |
|---------------|-----------------|------|---------|------|---------|------|
| | N = 68 | | N = 112 | | N = 103 | |
| | 2008 | % | 2009 | % | 2010 | % |
| Metronidazole | 68 | 100 | 112 | 100 | 103 | 100 |
| Diazepam | 53 | 78 | 95 | 84.8 | 96 | 93.2 |
| MgSO4 | 23 | 33.8 | 42 | 37.5 | 35 | 34 |

The highest number of treatment received for tetanus patients is with Metronidazole which recorded 68 (100%) cases in all three years. Meanwhile, the lowest number of treatment received for tetanus patients is with MgSO4 which recorded 23 (33.8%) cases in 2008, 42 (37.5%) cases in 2009 and 35 (34%) cases in 2010. The table below shows the number of cases based on length of hospital stay in the period of 2008 – 2010.

Table 5.9 Number of cases based on length of hospital stay in the period of 2008 – 2010

| Length of Hospital Stay | Number of cases | | | | | |
|-------------------------|-----------------|------|-----------------|------|-----------------|------|
| | N = 68 2008 | | N = 112 2009 | | N = 103 2010 | |
| | | % | | % | | % |
| < 4 weeks | 59 | 86.8 | 88 | 78.6 | 86 | 83.5 |
| 1-3 months | 9 | 13.2 | 24 | 21.4 | 17 | 16.5 |
| 4-6 months | - | - | - | - | - | - |
| > 6 months | - | - | - | - | - | - |

The highest number of patients based on length of hospital stay is less than 4 weeks which recorded 59 (86.8%) cases in 2008, 88 (78.6%) cases in 2009 and 86 (83.5%) cases in 2010. Meanwhile, the lowest number of patients based on length of hospital stay is between 4-6 months and more than 6 months which recorded 0 (0%) cases respectively.

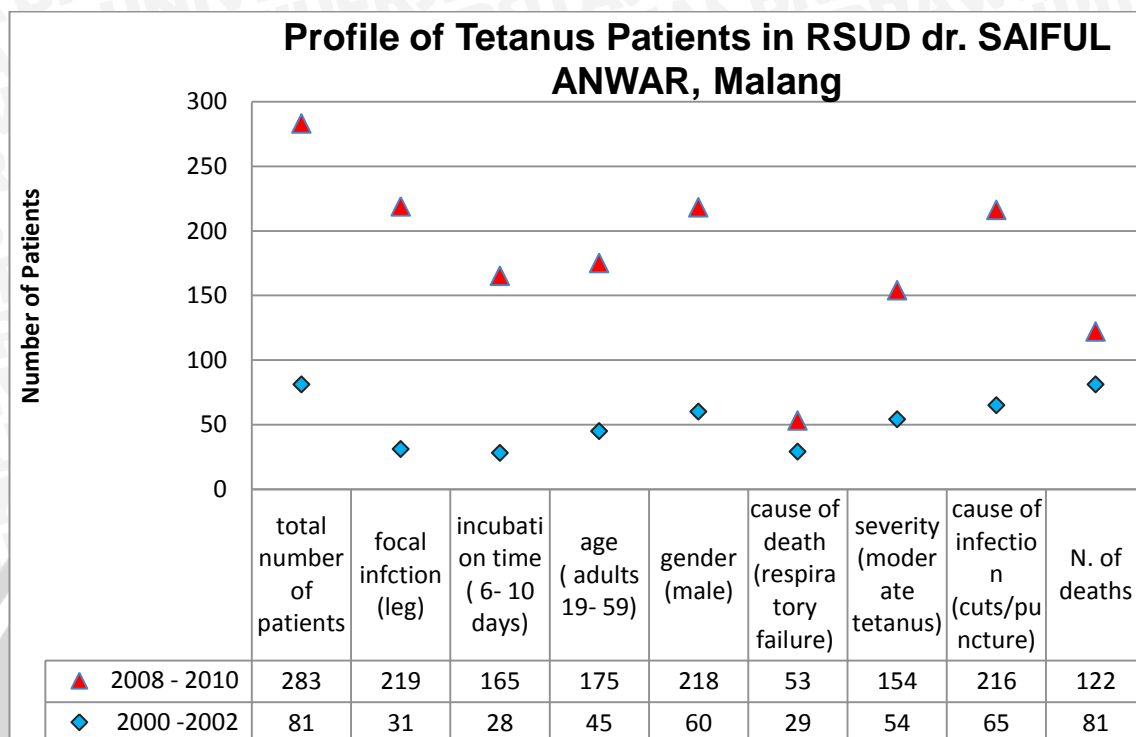


Figure 5.1: Chart of comparison between the profile of tetanus in RSUD dr. SAIFUL ANWAR, Malang of the period of 2000 – 2002 and 2008 – 2010.

From the overall data collected about the profile of tetanus patients in RSUD dr. SAIFUL ANWAR, Malang in the period of 2008 - 2010 shows that there is an increment in total number of patients seeking treatment for tetanus disease according the risk factors as compared to the period of 2000 – 2002. Moreover, there is also an increment of the total number of tetanus patients for the risk factors such as focal infection, gender and cause of death. However there is a shift in total number of tetanus patients for risk factors such as incubation time, age distribution, clinical severity and cause of death (Subiantoro, 2003). New data such as length of hospital stay, cause of infection and treatment are obtained to know the prognosis and management of the disease.