**Table S1**

**Demographics of the AMMI Survey Respondents**

|  |  |
| --- | --- |
| **Characteristic** | **AMMI****n = 72/467****(15.4%)** |
| **Practice Setting (%)****Teaching hospital****Community hospital** | 79.220.8 |
| **Median years in practice** | 10 |
| **Median numbers of hours providing patient care per week****Regions of Canada (%)****Western Canada****Central Canada****Atlantic Canada****Northern Canada** | 30395650 |
| AMMI = Association of Medical Microbiology and Infectious Disease |

**Table S2**

**Factors Physicians Consider to Determine Whether to give IV Antibiotics for Skin and Soft Tissue Infections (SSTIs)**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **CAEP****(n = 391)** | **AMMI****(n = 72)** | **P Value** |
| **How do you determine whether to give IV antibiotics for SSTIs? (Select as many as appropriate) (%)****Clinical Impression****Patient Comorbidities****Blood Tests****IDSA Guidelines/Classification Tools****Other** | 97.487.720.27.913.6 | 87.361.148.613.915.3 | **<0.001****<0.001****<0.001****0.06****0.71** |

CAEP = Canadian Association of Emergency Physicians

AMMI = Association of Medical Microbiology and Infectious Disease

**Table S3**

**Approach to Management of Skin and Soft Tissue Infections (SSTIs)**

|  |  |
| --- | --- |
| **Questions (%)** | **AMMI****(n = 72)** |
| **First choice of oral antibiotics for SSTIs (p = 0.34)****Cephalexin****Amoxicillin-Clavulanate****Other** | 81.95.612.5 |
| **First choice of IV antibiotics for SSTIs (p < 0.0001)****Cefazolin****Ceftriaxone****Other** | 86.12.811.1 |
| **Average duration of therapy with oral antibiotics for SSTIs (p < 0.0001)****3 days****5 days****7 days****10 days****Other** | 4.29.740.333.312.5 |
| **How long does a patient have to be on oral antibiotics before you consider treatment failure? (p < 0.0001)****24 h****36 h****48 h****72 h****96 h****Other** | 4.211.131.933.318.11.4 |
| **If you determine a patient has suffered a treatment failure, which of the following are you most likely to do next? (p = 0.03)****Switch to another oral antibiotic****Switch to an IV antibiotic****Unsure** | 4.295.80 |
| **Recommended clinical reassessment following first dose of IV antibiotics? (p = 0.04)****<24 h****24 h****48 h****≥ 72 h****Other** | 5.634.741.713.94.2 |
| **Setting for Subsequent IV doses****Return to ED****Home or Community****ID Clinic****Other** | N/A |

AMMI = Association of Medical Microbiology and Infectious Disease Canada

IV = intravenous

ED = emergency department

ID = infectious disease

N/A = not applicable

**Figure S1**

**Electronic Survey for CAEP Members**

PAGE 1 (Title page):

Risk Factors That Predict Failure with Oral Antibiotics for Skin and Soft Tissue Infections (SSTIs)

PAGE 2: PRACTICE PATTERNS

**1. In general, in what proportion of ED patients with SSTIs (cellulitis or erysipelas) do you administer intravenous (IV) antibiotics for part of their treatment course?**

|  |  |  |
| --- | --- | --- |
| Never1%2%3%4% | 5%10%15%20%25% | 30%35%40%45%>50% |

**2. How do you determine whether to give IV antibiotics for SSTIs (even a single dose)?**

**Please indicate as many as are appropriate:**

|  |
| --- |
| My clinical impression of infection severityPatient ComorbiditiesLaboratory ResultsLRINEC score (Laboratory Risk Indicator for Necrotizing Fasciitis)Classification tools (e.g. Eron classification, Dundee classification)Infectious Disease Society of America (IDSA) 2005 Guidelines |
| Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**3. When treating non-purulent SSTIs (cellulitis or erysipelas) with oral antibiotics, which agent would be your first choice?**Amoxicillin-ClavulanateCephalexinClindamycinDoxycycline (or minocycline)ErythromycinLinezolidPenicillin (including amoxicillin, dicloxacillin)Trimethoprim-Sulfamethoxazole (TMP-SMX)Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**4. When treating non-purulent SSTIs (cellulitis or erysipelas) with IV antibiotics, which agent would be your first choice?**CefazolinClindamycinDaptomycinNafcillin (or oxacillin)VancomycinOther (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**5. What is the average duration of therapy when prescribing IV antibiotics for patients with SSTIs (cellulitis or erysipelas)?**3 days5 days7 days10 days14 daysOther (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_**6. How long does a patient have to be on oral antibiotic therapy for an SSTI before you consider that treatment has failed? (e.g. worsening cellulitis on exam)**12 hours24 hours36 hours48 hours72 hours96 hoursOther (please specify in hours): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
|  |
|  |

**7. If a clinical prediction rule to predict failure with PO antibiotics for SSTIs was developed, would you use such a rule?**

|  |
| --- |
| YesNo |

**8. If you selected 'Yes' to the question above, what 'miss rate' would be acceptable for such a rule?**

**(Miss rate is defined as patients that fail PO antibiotic therapy despite the prediction rule suggesting that the patient could be successfully treated with a PO regimen)**

|  |  |
| --- | --- |
| 1%2%3%4%5%6%7%8%9%10% | 15%20%25%30%35%40%45%>50%N/A |

PAGE 3

 Please consider the following scenario when answering the remaining questions:

An adult patient (age > 17 years) presents to the Emergency Department with an SSTI (skin or soft tissue infection i.e. cellulitis or erysipelas).

The remainder of the survey focuses on the following question:

How important are the following factors in **predicting treatment failure** with **ORAL** antibiotic therapy?

Treatment failure is defined as any one of the following after the initial ED visit:

* Incision and drainage of abscess;
* Change in antibiotics (not due to allergy/intolerance);
* Specialist consultation (due to progression of symptoms); or
* Hospital admission

**NOTE: Questions 9 – 48 feature a 7 point Likert scale for the participant to answer (1 = Low Importance; 4 = Moderately Important; 7 = Highly Important)**

PAGE 4: HISTORICAL FEATURES

How important are the following **historical features** in predicting treatment failure with **ORAL** antibiotics for SSTIs (cellulitis or erysipelas)?

**9. History of chronic or recurrent cellulitis**

**10. History of previous failure with PO antibiotics for an SSTI**

**11. History of previous hospital admission for an SSTI**

**12. Human bite that results in an SSTI**

**13. Cat bite that results in an SSTI**

**14. Dog bite that results in an SSTI**

**15. Rodent Bite that results in an SSTI**

PAGE 5: COMORBIDITIES

How important are the following **comorbidities** in predicting treatment failure with **ORAL** antibiotics for SSTIs?

**16. Diabetes mellitus that is poorly controlled**

**(Poor control is defined as: HbA1c > 7%, or at least 1 of the following complications of diabetes: neuropathy, retinopathy, nephropathy, or hospital admission in the last 6 months for either diabetic ketoacidosis or hyperosmolar nonketotic state)**

**17. Chronic venous insufficiency**

**(Diagnosed by duplex ultrasonography or the presence of clinical manifestations of edema, skin changes, and venous ulceration)**

**18. End stage renal disease (ESRD) and on dialysis**

**19. Peripheral vascular disease (PVD)**

**(The patient has had either a documented ankle-brachial index (ABI) < 0.9; an amputated limb secondary to PVD; or a revascularization surgery such as a shunt)**

**20. Major gut pathology**

**(Defined as diabetic gastroparesis, previous GI surgery, or a malabsorptive syndrome)**

**21. Immunocompromise**

**(Examples include: AIDS, malignancy, chronic corticosteroids)**

**22. Morbid Obesity (BMI > 39)**

PAGE 6: PATIENT CHARACTERISTICS

How important are the following **patient characteristics** in predicting treatment failure with **ORAL** antibiotics for SSTIs?

**23. Advanced age**

***Please indicate age threshold (i.e. Age >\_\_\_\_\_years)***

**24. Patient is already on oral antibiotics (either for an SSTI or another infection)**

**25. Intravenous Drug Use (IVDU)**

**26. Institutionalized patient (example: prison inmate)**

**27. Social issues that may affect patient compliance (e.g. homeless, cognitive impairment, patient due to travel overseas, etc.)**

PAGE 7: VITAL SIGNS

How important are the following **vital signs** in predicting treatment failure with **ORAL** antibiotics for SSTIs (cellulitis or erysipelas)?

**28. Increased heart rate**

***Please specify a minimum threshold for HR (i.e. >\_\_\_\_\_ beats per minute)***

**29. Elevated temperature**

***Please indicate a minimum threshold for fever (i.e. >\_\_\_\_\_\_degrees Celsius)***

**30. Decreased temperature**

***Please indicate a threshold value for hypothermia (i.e. <\_\_\_\_\_ degrees Celsius)***

**31. Increased respiratory rate (RR)**

***Please indicate a minimum threshold for tachypnea (i.e.>\_\_\_\_\_breaths per minute)***

**32. Low systolic blood pressure (SBP)**

***Please indicate a minimum threshold for SBP (i.e. <\_\_\_\_\_\_ mm Hg):***

PAGE 8: PHYSICAL EXAM FINDINGS (1 OF 3)

How important are the following findings on **physical exam** in predicting treatment failure with **ORAL** antibiotics for SSTIs (cellulitis or erysipelas)?

**33. Location of SSTI on hands or feet**

**34. Location of SSTI on face**

**35. Location of SSTI over a joint**

**36. Location of SSTI over an area with hardware (e.g. prosthetic knee joint)**

**37. Location of SSTI over a recent (i.e. not fully healed) surgical site**

PAGE 9: PHYSICAL EXAM FINDINGS (2 OF 3)

How important are the following findings on **physical exam** in predicting treatment failure with **ORAL** antibiotics for SSTIs (cellulitis or erysipelas)?

**38. Rigors**

**39. Rapidly spreading erythema in the last 24 hours**

**40. Size of erythema (measured as the largest diameter)**

**41. Pain out of proportion**

**42. Severe pain (patient reports pain > 8/10)**

PAGE 10: PHYSICAL EXAM FINDINGS (3 OF 3)

How important are the following findings on **physical exam** in predicting treatment failure with **ORAL** antibiotics for SSTIs (cellulitis or erysipelas)?

**43. Presence of crepitus**

**44. Presence of fluctuance**

**45. Presence of ulcers in the infected area**

**46. Presence of edema or lymphedema**

**47. Presence of an indwelling IV catheter in the infected area**

PAGE 11: LABORATORY FINDINGS

**48. How important are serum laboratory tests in predicting failure with ORAL antibiotic therapy for SSTIs (cellulitis or erysipelas)?**

**49. Do you routinely order bloodwork for a patient with an SSTI (cellulitis or erysipelas)?**

Yes (if this is selected, the participant is asked to answer questions 50 – 55)

No (if this is selected, the participant is automatically sent to question 56)

PAGE 12: LABORATORY TESTS

**50. Elevated white blood cell (WBC) count**

**(Normal range = 3 – 10.5 x 109/L)**

***Please indicate a minimum threshold for WBC count (i.e. >\_\_\_\_\_ x109/L)***

**51. Elevated erythrocyte sedimentation rate (ESR)**

**(Normal ESR range = 0 – 10 mm/hr)**

***Please indicate the minimum threshold for ESR (i.e. >\_\_\_\_\_ mm/hr)***

**52. Elevated C reactive protein (CRP)**

**(Normal CRP < 8 mg/L)**

***Please indicate a minimum threshold for CRP (i.e. >\_\_\_\_\_ mg/L)***

**53. Elevated venous lactate**

**(Normal range = 0.5 – 2.2 mmol/L)**

***Please indicate a minimum threshold for venous lactate (i.e. >\_\_\_\_\_mmol/L)***

**54. Elevated glucose**

**(Normal glucose range = 4 – 6.9 mmol/L)**

***Please indicate a minimum threshold for hyperglycemia (i.e. >\_\_\_\_\_ mmol/L)***

**55. Elevated serum creatinine (Cr)**

**(Normal serum Cr range = 35 – 88 umol/L [females]; 62 – 106 umol/L [males])**

***Please indicate a minimum threshold for elevated serum Cr (i.e. >\_\_\_\_\_ umol/L)***

PAGE 13: PROFESSIONAL STATUS & PRACTICE SETTING

**56. Please indicate your gender (optional)**

Male

Female

**57. On average, how many clinical hours do you spend per week in the ED?**

**58. How many years have you been practicing Emergency Medicine?**

**59. Please state your credentials**

Options:

FRCPC

CCFP-EM

CCFP

Other (please specify): \_\_\_\_\_\_

**60. In what province do you practice medicine?**

Drop down menu:

Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon

**61. Please indicate your practice setting:**

Academic teaching hospital

Community hospital

**Figure S2**

**Electronic Survey for AMMI Members**

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***Please indicate a minimum threshold for elevated serum Cr (i.e. >\_\_\_\_\_ umol/L)***

PAGE 13: PROFESSIONAL STATUS & PRACTICE SETTING

**56. Please indicate your gender (optional)**

Male

Female

**57. On average, how many clinical hours do you spend per week?**

**58. How many years have you been practicing Infectious Disease medicine?**

**59. Please state your credentials**

Options:

FRCPC – with specialty training in Infectious Disease Medicine

Other (please specify): \_\_\_\_\_\_

**60. In what province do you practice medicine?**

Drop down menu:

Alberta, British Columbia, Manitoba, New Brunswick, Newfoundland, Northwest territories, Nova Scotia, Nunavut, Ontario, Prince Edward Island, Quebec, Saskatchewan, Yukon

**61. Please indicate your practice setting:**

Academic teaching hospital

Community hospital

Outpatient clinic