**Table S1**

**Demographics of the AMMI Survey Respondents**

|  |  |
| --- | --- |
| **Characteristic** | **AMMI**  **n = 72/467**  **(15.4%)** |
| **Practice Setting (%)**  **Teaching hospital**  **Community hospital** | 79.2  20.8 |
| **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** | 30  39  56  5  0 |
| 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** | 97.4  87.7  20.2  7.9  13.6 | 87.3  61.1  48.6  13.9  15.3 | **<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** | 81.9  5.6  12.5 |
| **First choice of IV antibiotics for SSTIs (p < 0.0001)**  **Cefazolin**  **Ceftriaxone**  **Other** | 86.1  2.8  11.1 |
| **Average duration of therapy with oral antibiotics for SSTIs (p < 0.0001)**  **3 days**  **5 days**  **7 days**  **10 days**  **Other** | 4.2  9.7  40.3  33.3  12.5 |
| **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** | 4.2  11.1  31.9  33.3  18.1  1.4 |
| **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** | 4.2  95.8  0 |
| **Recommended clinical reassessment following first dose of IV antibiotics? (p = 0.04)**  **<24 h**  **24 h**  **48 h**  **≥ 72 h**  **Other** | 5.6  34.7  41.7  13.9  4.2 |
| **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?**

|  |  |  |
| --- | --- | --- |
| Never  1%  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 severity  Patient Comorbidities  Laboratory Results  LRINEC 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-Clavulanate  Cephalexin  Clindamycin  Doxycycline (or minocycline)  Erythromycin  Linezolid  Penicillin (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?**  Cefazolin  Clindamycin  Daptomycin  Nafcillin (or oxacillin)  Vancomycin  Other (please specify): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  **5. What is the average duration of therapy when prescribing IV antibiotics for patients with SSTIs (cellulitis or erysipelas)?**  3 days  5 days  7 days  10 days  14 days  Other (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 hours  24 hours  36 hours  48 hours  72 hours  96 hours  Other (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?**

|  |
| --- |
| Yes  No |

**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**

PAGE 1 (title page):

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PAGE 9: PHYSICAL EXAM FINDINGS (2 OF 3)

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**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?**

**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