

## **BAB 5**

### **KESIMPULAN DAN SARAN**

#### **5.1. Kesimpulan**

Berdasarkan hasil penelitian yang telah dilakukan pada pasien bedah ortopedi yang dirawat di Instalasi Rawat Inap RSUD Kabupaten Sidoarjo periode Januari 2019 hingga Oktober 2019, diperoleh beberapa kesimpulan yaitu:

1. Penggunaan antibiotik profilaksis pada pasien bedah ortopedi yang paling banyak digunakan adalah Cefazolin 1x2g (i.v) 60 menit sebelum tindakan pembedahan (77,5%).
2. Evaluasi penggunaan antibiotik profilaksis secara kualitatif berdasarkan kriteria Gyssens diperoleh 59% termasuk kategori IIIA (pemberian antibiotik terlalu lama), 17,9% termasuk kategori IVA (terdapat pilihan antibiotik lain yang lebih efektif), 23,1% termasuk kategori V (tidak ada indikasi penggunaan antibiotik). Sebagian penggunaan antibiotik profilaksis pada pasien bedah ortopedi di Instalasi Rawat Inap RSUD Kabupaten Sidoarjo tidak rasional.

## 5.2. **Saran**

Berdasarkan hasil penelitian yang dilakukan, maka penulis mengusulkan saran sebagai berikut:

1. Perlu adanya penerapan penggunaan PPK dan PPAB antibiotik profilaksis yang ada di RSUD Kabupaten Sidoarjo agar penggunaan antibiotik profilaksis kedepannya dapat digunakan dengan tepat sehingga dapat menekan angka resistensi antibiotik.
2. Perlu dilakukan penelitian yang sama dengan pengambilan sampel secara prospektif agar mendapatkan hasil yang lebih seksama.
3. Perlu dilakukan penelitian lanjutan tentang studi penggunaan antibiotik profilaksis pada pasien bedah ortopedi secara kuantitatif menggunakan metode DDD (*Defined Daily Dose*).
4. Perlu dilakukan penelitian lanjutan tentang studi penggunaan antibiotik empiris pada pasien bedah ortopedi secara kuantitatif dan kualitatif.

## DAFTAR PUSTAKA

- Allemann, S.S., van Mil, J.W.F., Botermann, L., Berger, K., Griese, N., dan Hersberger, K.E., 2014. Pharmaceutical Care : the PCNE definition 2013, *International journal of clinical pharmacy*, **36**: 544-555.
- Bennett, A.R., and Smith K.D., 2013, Open Fractures, *Orthopaedics and trauma*, **27(1)**: 9-14.
- Basheti, I.A., Qunaibi, E.A., Bulatova, N.R., Samara, S., dan Aburuz, S., 2013. Treatment related problems for outpatients with chronic diseases in Jordan: the value of home medication reviews. *International journal of clinical pharmacy*, **35(1)**: 92-100.
- Bratzler, D.W., Dellinger, E.P., Olsen, K.M., Perl, T.M., Auwaerter, P.G., Bolon, M.K., Fish, D.N., Napolitano, L.M., Sawyer, R.G., Slain, D., Steinberg, J.P., Weinstein, R.A., 2013, Clinical practice guidelines for antimicrobial prophylaxis in surgery, *Am J Health-Syst Pharm*, **70**:195-283.
- Brahma, Marak, M., Wahlang, J., 2012, Rational use of drug and irrational drug combination, *The internet journal of pharmacology*, **10**:1.
- Carver, D.C., Kuehn, S.B., and Weinlein, J.C., 2013, Role of systemic and local antibiotics in The Treatment of Open Fractures, *Orthopedic Clinics of North America*, **48(2)**: 37-153.
- Central for Disease control and Prevention (CDC), 2017, [pdf] London : Central for Disease Control and Prevention, 9 surgical Site Infection (SSI) Event, Diakses pada 26 Januari 2017, <http://www.cdc.gov/nhsn/pdfs/pscmanual/9pcssicurrent.pdf>
- Court-Brown, C.M., Bugler, K.E., Clement, N.D., Duckworth, A.D., McQueen, M.M., 2011, The epidemiology of open fractures in adults, A 15-year review, *International Journal of the Care of the injured*, **43(6)**: 891-897.
- Cunha, B.A., 2015, *Antibiotic Essentials*, 14<sup>th</sup> edition, Jaypee Brothers Medical Publisher, New Delhi.

- Deck and Winston, 2014, 'Antibiotik beta-laktam & aktif dinding & membran sel lainnya', In Katzung, G.B., Masters, B.S., and Trevor, J.A. *Farmakologi dasar dan klinik*, ECG, Jakarta.
- Deck and Winston, 2014, 'Aminoglikosida dan spektinomisin', In Katzung, G.B., Masters, B.S., and Trevor, J.A., *Farmakologi dasar dan klinik*, ECG, Jakarta.
- Depkes RI, 2009, Sistem kesehatan nasional, Diperoleh tanggal 15 Mei 2018. <http://www.depkes.go.id>
- Duckworth, T., and Blundell, C.M., 4<sup>th</sup> Edition, 2010, *Lecture Notes: Orthopaedics and Fracture*, A John Wiley & Sons, Ltd., Publication, Sheffield.
- Gans, I., Jain, A., Sirisreerux, N., Haut, E.R., dan Hasenboehler, E.A., 2017, Current practice of antibiotic prophylaxis for surgical fixation of closed long bone fracture: a survey of 297 members of the orthopedic trauma association, *Patient safety in surgery*, **11**: 2.
- Garner and Anderson, 2016, Surgical Site Infection An Update, *Infectious Disease Clinics of North America*, **30(4)**: 909-929.
- Guntur, H.A., 2010, 'Sepsis', in Aru, W.S., *Buku Ajar Ilmu Penyakit Dalam*, Edisi V Jilid III, Fakultas Kedokteran Universitas Indonesia, Jakarta, pp 2289.
- Grayson, M.L., 2010, *Kucer's The Use of Antibiotics* 6<sup>th</sup> edition, Edward Arnold Ltd, Jakarta.
- Gyssens, IC., 2005, 'Audit for Monitoring the Quality of Antimicrobial Prescription', in Gould, I.M., Van der Meer, *Antibiotik Policies: Theory and Practice*, Kluwer Academic Publishers, New York, 197-226.
- Hadi, U., Duerink, D.O., Lestari, E.S., Nagelkerke, N.J., Keuter, M., Suwandojo, E., 2008, Audit of antibiotic prescribing in two governmental teaching hospital in Indonesia, *Clinical Microbiology and Infectious Disease Journal*, **14(7)**: 698-707.
- Hall, C., Allen, J., and Barlow, G., 2015, Antibiotic prophylaxis, *Surgery Oxford*, **30(12)**: 651-8.

- Hanfiah, Y., dan Amir, A., 2008, *Etika Kedokteran dan Etika Kedokteran dan Hukum Kesehatan Edisi 4*, Penerbit Buku Kedokteran, ECG, Jakarta.
- Haryanti, L., Pudjiadi, A.H., Irfan, E.K.B., Thayeb, A., Amir, I., dan Hegar, B., 2013, Prevalens dan faktor risiko infeksi luka operasi pasca bedah, *Sari Pediatri*, **15(4)**: 207-212.
- Hauser, A.R., 2013, *Antibiotic Basics for Clinicians: The ABC's of Choosing The Right Antibacterial Agent 2nd Edition*, Lippincott William & wilkins, a Wolters Kluwer business, Philadelphia.
- Istiantoro, Yati, H., and Gan, V.H.S., 2012, 'Penisilin, Sefalosporin dan Antibiotik Betalaktam lainnya', In Ganiswarna, Sulistia, G., *Farmakologi dan Terapi*, Edisi 5, Bagian Farmakologi Fakultas Kedokteran UI, Jakarta, pp 664-693.
- Jitowiyono, S., dan Kristiyanasari, W., 2010, *Asuhan Keperawatan Post Operasi Pendekatan Nanda, NIC, NOC*, Nuha Medika, Yogyakarta.
- Jutte, P.C., Ploegmakers, J.J.W., and Bulstra, S.K., 2016, Skeletal Muscle and Plasma Concentration of Cefazolin, *British Journal of Anesthesia*, **117(1)**: 3-5.
- Kementrian Kesehatan Republik Indonesia, 2011, Peraturan Menteri Kesehatan Republik Indonesia Nomor 2406/MENKES/PER/2011 tentang *Pedoman Umum Penggunaan Antibiotik*, Jakarta: Kementrian Kesehatan Republik Indonesia.
- Kementrian Kesehatan Republik Indonesia, 2015, Peraturan Menteri Kesehatan Republik Indonesia Nomor 8 tahun 2015 tentang *Program Pengendalian Resistensi Antimikroba Di Rumah Sakit*, Jakarta: Kementeri Kesehatan Republik Indonesia.
- Lee, D., and Bregman, U., 2006, 'Studies of drug utilization', In Strom, B.L., *Pharmacoepidemiology*, John Wiley and Sons, Ltd, Arlington.
- Lenander, C., Elfsson, B., Danielsson, B., Midlov, P., Hasselstrom, J., 2014, Effects of a pharmacist-led structured medication review in primary care on drug-related problems and hospital admission rates: a randomized controlled trial, *Scandinavian journal of primary health care*, **32(4)**: 180-186.

- Liang, W., dan Chikritzhs, T., 2016, The effect of Age on Fracture Risk: A Population-Based Cohort Study, *Journal of aging research*, **2016(1)**: 1-5.
- Litrenta, J., and Oetgen, M., 2017, *Hafnia alvei* : A new pathogen in Open Fracture, *Trauma Case Reports*, **8**:41-45.
- Lyden, J.R., and Dellinger, E.P., 2016, Surgical Site Infection in Hospital Medicine Clinics, *The American Journal of Emergency Medicine*, **5(2)**: 319-333.
- Megill, S.S., Hellinger, W., Cohen, J., Kay, R., Bailey, C., Boland, B., Carey, D., Guzman, J.D., Dominguez, K., Edwards, J., Rogaczewski, L., Horan, T., Miller, M., Phelps, M., Saltford, R., Seibert, J., Smith, B., Staring, P., Viergutz, B., walsh, K., Rathore, M., Guzman, N., Fridkin, S., 2012, Prevalence of healthcare-associated infections in acute care hospitals in Jacksonville, Florida, *Infection control hospital epidemiology*, **33(3)**: 283.
- MIMS, 2014, Sulperazon dosage and drug information, Diakses pada 4 April 2020, <https://www.mims.com/indonesia/drug/info/sulperazon>.
- Narsaria, N., Singh, A.K., 2017, Role of Prophylactic Antibiotics in Orthopaedics, *Journal of Ecronicon*, **7(1)**: 1-2.
- Navarro, R., 2008, 'Drug utilization review strategies', In *Managed care pharmacy practice 2nd Edition*, Jonesand Bartlett Publishers, Canada.
- Nayagam, S., 2011, *Apleys: System of Orthopaedic's and fractures ninth edition*, Butterworth Heineman, United Kingdom.
- Paulsen, F., and Waschke, J., 2013, *Sobotta Atlas of Human Anatomy*, Vol.1, 15th Edition, Urban &Fischer, London.
- Petri, Jr., William, A., 2011, 'Penicillins, Cephalosporins and Other  $\beta$ -Lactam Antibiotics', in Gilman, A.G., *Goodman & Gilman's the pharmacological basis of therapeutics 12th Edition*, McGraw-Hill, California.
- Peraturan Menteri Kesehatan Republik Indonesia, 2011, Peraturan Menteri Kesehatan Republik Indonesia Nomor 2406/MENKES/PER/2011

tentang *Pedoman Umum Penggunaan Antibiotik*, Jakarta: Menteri Kesehatan Republik Indonesia.

- Peraturan Menteri Kesehatan Republik Indonesia, 2015, Peraturan Menteri Kesehatan Republik Indonesia Nomor 8 tahun 2015 tentang *Program Pengendalian Resistensi Antimikroba Di Rumah Sakit*, Jakarta: Kementerian Kesehatan Republik Indonesia.
- Puti, R.R., Romadhona, N., Ahmad, D.M., 2019, Hubungan Jenis Kecelakaan dengan Tipe Fraktur pada Fraktur Tulang Panjang Ekstremitas Bawah, *Jurnal Integrasi Kesehatan & Sains*, **1(1)**:32-35.
- Samuel, A., 2013, 'Pola resistensi antibiotik terhadap isolasi bakteri aerob penyebab infeksi luka operasi di ruang rawat inap bagian bedah dan kebidanan RSUD Dr. H. Abdul Moeloek Bandar Lampung', *Skripsi*, Sarjana Kedokteran, Universitas Lampung, Lampung.
- Siswandono, Soekardjo, B., Handono, S., Sondakh, R., 2016, 'Hubungan struktur-Aktivitas Obat Antibiotika', in Siswandono, *Kimia Medisinal*, Vol 2, Airlangga University Press, Surabaya.
- Setiabudy, R., 2012, *Farmakologi dan Terapi* Edisi 5, Departemen Farmakologi dan Terapi Fakultas Kedokteran UI Press, Jakarta.
- Sexton, S.E., 2014, Open Fractures of the Foot and Ankle, *Clinics in podiatric medicine and surgery*, **31(4)**: 461-486.
- Solomon, L., Warwick, D., Nayagam, S., 2014, *Apley and Solomon's Concise System of Orthopaedics and trauma 4<sup>th</sup> ed*, CRC Press Taylor and Francis Group, Boca Raton, pp 325-349.
- Solomon, L., Graham, A., Kartini, A., 2012, *Apley's system of orthopaedics and fractures*, 7<sup>th</sup> ed., Widya Medika, Jakarta, pp 238-453.
- Sweetman, S.C., 2009, *Martindale The Complete Drug Reference 36<sup>th</sup>*, The pharmaceutical Press, London.
- Ulman, M.A., dan Rotschafer, J.C., 2016, 'Antimicrobial prophylaxis in surgery', in Chisholm-Burns, M.A., Wells, B.G., dan Schwinghammer, T.L., *Pharmacotherapy principles and practice*, 5<sup>th</sup> Edition, McGraw-Hill, New York.

- Van der Meer, J.W.M., dan Gyssens, I.C., 2001, Quality of antimicrobial drug prescription in hospital, *Clinical Microbiology and Infection: the official publication of the European Society of Clinical Microbiology and Infectious Diseases*, **6**: 12-5.
- With, K.D., Allerberger, F., Amann, S., Apfalter, P., Brodt, H.R., Eckmanns, T., Fellhauer, M., Geiss, H.K., Janata, O., Krause, R., Lemmen, S., Meyer, E., Mittermayer, H., Porsche, U., Presterl, E., Reuter, S., Sinha, B., Straub, R., Fordos, A.W., Wenisch, C., Kern, W.V., 2016, Strategies to Enhance Rational Use of Antibiotics in Hospital: a Guideline by The German Society for Infectious Diseases, *Infection*, **44(3)**: 395-439.
- World Health Organization, 2003, *Introduction to drug utilization research*, Geneva: World Health Organization Press.
- World Health Organization, 2016, *Global Guidelines For The Prevention of Surgical Site Infection*, Geneva: World Health Organization Press.
- Zalavras, C.G., 2017, Prevention of infection in open fracture, *Infection Disease Clinics of North America*, **31(2)**: 339-352.
- Zinn, J., 2012, Surgical Wound Classification: Communication is needed for accuracy, *AORN journal*, **95(2)**: 274-278.