

Yael Dishon Benattar

Supervisors:

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My PhD research focused on a cost-benefit model development for antibiotic treatment, incorporated within a computerized decision support system (CDSS), to reduce futile antibiotic treatment at End of Life. The global threat of multidrug resistant bacteria necessitates judicious use, avoiding futile antibiotic treatment, such as that at End of Life, which confers no benefit in terms of life expectancy, but does promote antibiotic resistance. TREAT is a previously developed CDSS for antibiotic treatment, in clinical use, which is based on a cost-benefit calculation, however, it does not take into account imminent death (i.e, reduced benefit for the patient) nor patients' potential for acquisition and spreading of bacteria (i.e, increased costs to the treated patient, other and future patients). We modified the cost and benefit components to account for terminal conditions. This is a first attempt to deal with futile antibiotic treatment and complex decision-making processes through an explicit model.

Research Grants

1. 2017 - Gassner Fund for Medical Research (C) - Choosing wisely antibiotic treatment to reduce futile therapy: cost benefit model development - 80,000 NIS. (CI, with Prof. Mical Paul, PI).

Scholarships, Awards and Prizes

2. Graduate Studies Authority, University of Haifa, Scholarship for Excellence in Studies, 03/2014, 10,000 NIS.
3. Graduate Studies Authority, Advanced Studies scholarship for research students, 10/2015-10/2018 (3 years, a total of 132,000 NIS).

Articles in Refereed Journals

Published

1. **Dishon Benattar Y**, Omar M, Zusman O, Yahav D, Zak-Doron Y, Altunin S, Elbaz M, Daitch V, Granot M, Leibovici L, Paul M (2016). The Effectiveness and Safety of High-Dose Colistin: Prospective Cohort Study. *Clinical Infectious Diseases*. 63(12):1605-1612. [I.F. 8.313, 3/93, Q1 (Infectious Diseases), 16/158 (Immunology), 11/135 (Microbiology)]. 28 Citations.
2. Zusman O, Altunin S, Koppel F, **Dishon Benattar Y**, Gedik H, Paul M (2017). Polymyxin monotherapy or in combination against carbapenem-resistant bacteria: systematic review and meta-analysis. *Journal of Antimicrobial Chemotherapy*. 72(1):29-39. [I.F 5.439, 10/93,

Q1 (Infectious Diseases), 24/135 (Microbiology), 22/270 (Pharmacology & Pharmacy)]. 65 Citations.

3. Zlotnick C, Birenbaum-Carmeli D, Goldblatt H, **Dishon Y**, Taychaw O, Shadmi E (2017). Adolescent immigrants, the impact of gender on health status. *European Journal of Public Health*. 27(3): 453-459. [I.F 2.391, 77/193, Q2 (Public, Environmental and Occupational Health)]. 1 Citation.
4. Zlotnick C, Birenbaum-Carmeli D, Goldblatt H, **Dishon Y**, Taychaw O, Shadmi E. (2018). Social Gradient and Heterogeneity in Adolescent Immigrants' Health Risk and Healthcare Experiences. *European Journal of Pediatrics*. 177(2): 221-228. [I.F 2.305, 38/128, Q2 (Pediatrics)]. 1 Citation.
5. Paul M, Daikos G L, Durante Mangoni E, Yahav D, Carmeli, **Dishon Benattar Y**, Skiada A, Andini R, Eliakim-Raz N, Nutman A, Zusman O, Antoniadou A, Pafundi P C, Adler A, Dickstein Y, Pavleas I, Zampino R, Daitch V, Bitterman R, Zayyad H, Koppel F, Levi I, Babich T, Friberg LE, Mouton JW, Theuretzbacher U, Leibovici L (2018). Colistin alone versus colistin plus meropenem for the treatment of severe infections caused by carbapenem-resistant Gram-negative bacteria: Multicentre open-label randomized controlled trial. *Lancet Infectious Diseases*. 18(4):391-400. [I.F 24.446, 1/93, Q1 (Infectious Diseases)]. 116 Citations.
6. Zak-Doron Y, **Dishon Benattar Y**, Pfeffer I, Daikos GL, Skiada A, Antoniadou A, Durante-Mangoni E, Andini R, Cavezza G, Leibovici L, Yahav D, Eliakim-Raz N, Carmeli Y, Nutman A, Paul M; AIDA Study Group (2018). The Association Between Empirical Antibiotic Treatment and Mortality in Severe Infections Caused by Carbapenem-resistant Gram-negative Bacteria: A Prospective Study. *Clinical Infectious Diseases*. 67(12):1815-1823. [I.F. 8.313, 3/93, Q1 (Infectious Diseases), 16/158 (Immunology), 11/135 (Microbiology)]. 9 Citations.
7. Dickstein Y, Lellouche J, Dalak Amar MB, Schwartz D, Nutman A, Daitch V, Yahav D, Leibovici L, Skiada A, Antoniadou A, Daikos GL, Andini R, Zampino R, Durante-Mangoni E, Mouton JW, Friberg LE, **Benattar YD**, Bitterman R, Neuberger A, Carmeli Y, Paul M (2019). Treatment outcomes of colistin and carbapenem-resistant *Acinetobacter baumannii* infections: an exploratory subgroup analysis of a randomized clinical trial. *Clinical Infectious Diseases*. 69(5):769-776 [I.F. 8.313, 3/93, Q1 (Infectious Diseases), 16/158 (Immunology), 11/135 (Microbiology)]. 17 Citations.
8. Zlotnick C, Birenbaum-Carmeli D, Goldblatt H, **Dishon Y**, Taychaw O, Shadmi E. (2019). The Impact of Adolescents' Racial and Ethnic Self-Identity on Hope. *Health & Social Care in the Community*. 27(5): e705-715. [I.F 2.050, 62/170, Q2 (Public, Environmental & Occupational Health), 5/44, Q1 (Social Work)].

9. Dickstein Y, Lellouche J, Schwartz D, Nutman A, Rakovitsky N, **Dishon Benattar Y**, Altunin S, Bernardo M, Iossa D, Durante-Mangoni E, Antoniadou A, Skiada A, Deliolanis I, Daikos GL, Daitch V, Yahav D, Leibovici L, Rognås V, Friberg LE, Mouton JW, Paul M, Carmeli Y; AIDA study group (2019). Colistin Resistance Development Following Colistin-Meropenem Combination Therapy vs. Colistin Monotherapy in Patients with Infections Caused by Carbapenem-Resistant Organisms. *Clinical Infectious Diseases* [Ahead of print] [I.F. 8.313, 3/93, Q1 (Infectious Diseases), 16/158 (Immunology), 11/135 (Microbiology)].
10. Kristoffersson AN, Brill MJ, Rognås V, **Dishon Y**, Durante-Mangoni E, Daitch V, Skiada A, Lellouche J, Nutman A, Kotsaki A, Andini R, Eliakim-Raz N, Bitterman R, Antoniadou A, Karlsson MO, Theuretzbacher U, Leibovici L, Daikos GL, Mouton JW, Carmeli Y, Paul M, Friberg LE (2020). Population pharmacokinetics of colistin and the relation to survival in critically ill patients infected with colistin susceptible and carbapenem-resistant bacteria. *Clinical Microbiology and Infection* [ahead of print] [I.F. 7.117, 15/135, Q1, (Microbiology), 4/93, Q1 (Infectious Diseases)].
11. Nutman A, Lellouche J, Temkin E, Daikos GL, Skiada A, Durante-Mangoni E, **Dishon-Benattar Y**, Bitterman R, Yahav D, Daitch V, Bernardo M, Iossa D, Zusman O, Friberg, LE, Mouton JW, Theuretzbacher U, Leibovici L, Paul M, Carmeli Y, AIDA Study Group (2020). Colistin plus meropenem for carbapenem-resistant Gram-negative infections: in vitro synergism is not associated with better clinical outcomes. *Clinical Microbiology and Infection* [ahead of print] [I.F. 7.117, 15/135, Q1, (Microbiology), 4/93, Q1 (Infectious Diseases)].

Clinical protocol

1. Dickstein Y, Leibovici L, Yahav D, Eliakim-Raz N, Daikos GL, Skiada A, Antoniadou A, Carmeli Y, Nutman A, Levi I, Adler A, Durante-Mangoni E, Andini R, Cavezza G, Mouton JW, Wijma RA, Theuretzbacher U, Friberg LE, Kristoffersson AN, Zusman O, Koppel F, **Dishon Benattar Y**, Altunin S, Paul M; AIDA consortium (2016). Multicentre open-label randomised controlled trial to compare colistin alone with colistin plus meropenem for the treatment of severe infections caused by carbapenem-resistant Gram-negative infections (AIDA): a study protocol. *BMJ Open*. 6(4). [I.F. 2.496, 52/165, Q2 (Medicine, General & Internal)]. 23 Citations.

Submitted publications

1. **Dishon-Benattar Y**, Dagan E, Shbita R, Zak-Doron Y, Leibovici L, Paul M, Eliakim-Raz N. Attitudes towards antibiotic treatment for patients at end of life and in presence of advanced dementia: a survey among health care professionals.
2. Daitch V, Paul M, Daikos GL, Durante-Mangoni E, Yahav D, Carmeli Y, **Dishon Benattar Y**, Skiada A, Andini R, Eliakim-Raz N, Nutman A, Zusman O, Antoniadou A, Cavezza G, Adler A, Dickstein Y, Pavleas I, Zampino R, Bitterman R, Zayyad H, Koppel F, Zak-Doron

Y, Levi I, Babich T, Turjeman A, Ben-Zvi H, Friberg LE, Mouton JW, Theuretzbacher U, Leibovici L. Excluded versus included patients in a randomized controlled trial of infections caused by carbapenem-resistant Gram-negative bacteria: relevance to external validity.

In process

1. **Dishon-Benattar Y**, Gluck Pfeffer I, Lause Mogensen M, Ward LM, Leibovici L, Dagan E, Paul M. Individualization of ecological costs in a computerized decision support system for antibiotic treatment: effects on the system's recommendations and comparison to physicians' behavior.

