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Antimicrobial Resistance Pattern in a Tertiary Hospital in Al-kharj, Saudi Arabia

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SUMMARY. **Antimicrobial resistance has emerged as a serious global public health concern that, by 2050, could result in up to ten million annual fatalities. This was a retrospective study that was conducted to assess the prevalence of antibiotic resistance in a tertiary hospital in Al-Kharj. A total of 601 bacterial isolates were collected in the hospital in 2020. Most of the isolates were for gram-negative bacteria (85.02%). The most prevalent bacteria were *Klebsiella pneumoniae* (25.46%), *Escherichia coli* (18.97%), *Acinetobacter baumannii* (16.30%), *Pseudomonas aeruginosa* (15.14%), and *Proteus mirabilis* (7.32%). The present study found high rates of antibiotic resistance among *Escherichia coli,* methicillin-resistant *Staphylococcus aureus, Proteus mirabilis, Klebsiella pneumoniae,* and *Acinetobacter baumannii.* The benefits of certain measures designed to lower these infections, along with an understanding of the clinical and financial effects of antibiotic-resistant bacterial infections, will enable better control and increased patient safety.**

RESUMEN. La resistencia a los antimicrobianos se ha convertido en un grave problema de salud pública mundial que, para 2050, podría provocar hasta diez millones de muertes anuales. Este fue un estudio retrospectivo que se realizó para evaluar la prevalencia de la resistencia a los antibióticos en un hospital terciario en Al-Kharj. En el hospital se recogieron un total de 601 aislamientos bacterianos en 2020. La mayoría de los aislamientos fueron para bacterias gramnegativas (85,02%). Las bacterias más prevalentes fueron *Klebsiella pneumoniae* (25,46%), *Escherichia coli* (18,97%), *Acinetobacter baumannii* (16,30%), *Pseudomonas aeruginosa* (15,14%) y *Proteus mirabilis* (7,32%). El presente estudio encontró altas tasas de resistencia a los antibióticos entre Escherichia coli, *Staphylococcus aureus* resistente a la meticilina, *Proteus mirabilis*, *Klebsiella pneumoniae* y *Acinetobacter baumannii*. Los beneficios de ciertas medidas diseñadas para reducir estas infecciones, junto con la comprensión de los efectos clínicos y financieros de las infecciones bacterianas resistentes a los antibióticos, permitirán un mejor control y una mayor seguridad del paciente.

KEY WORDS: antibiotic resistance, bacteria, prevalence, susceptibility.

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