

论著

大肠埃希菌表型分布及其耐药性分析

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摘要:

目的调查临床分离的大肠埃希菌产不同β内酰胺酶株分布情况、表型特征及耐药现状。方法收集某院2007年7月—2008年7月临床分离大肠埃希菌株,用VITEK 2 Compact 对其进行鉴定和17种常用抗菌药物的药敏试验,以高级专家系统软件(AESTM)验证和解释药敏测试结果。结果421株大肠埃希菌中,表型主要分为三类:产超广谱β内酰胺酶(ESBLs)株、产获得性青霉素酶株和野生株。产ESBLs菌株共249株,占59.14%,其中67株为CTX M型;产获得性青霉素酶菌株120株,占28.50%;产碳青霉烯酶菌株8株,占1.90%;野生株47株,占11.16%。产酶总阳性率为88.84%(374/421)。主要标本来源为洁净中段尿,分离174株(41.33%),其次为痰标本101株(23.99%);而科室来源则比较分散,最多为肾内科39株(9.26%)。各型产酶株的耐药性有很大差异;产ESBLs仍是大肠埃希菌产生耐药性的主要原因,其对大多数β内酰胺类抗生素的耐药性明显高于产获得性青霉素酶株和野生株(P<0.05),并对大多数抗菌药物高度耐药。结论大肠埃希菌产酶率非常高,并存在多种耐药表型,其中以产ESBLs最为常见;产酶株的多重耐药和交叉耐药现象十分严重,应高度重视对产酶株的监控,合理使用抗菌药物,以控制耐药株的产生与扩散。

关键词: 大肠埃希菌 耐药表型 超广谱β内酰胺酶 获得性青霉素酶 碳青霉烯酶 抗药性 微生物 微生物敏感性试验 抗菌药物

Phenotypes and drug resistance of clinical isolates of Escherichia coli

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Abstract:

Objective To evaluate the distribution, phenotypes and resistance profiles of different kinds of β lactamases producing Escherichia coli (E. coli) isolated from clinic. Methods E. coli isolated from a hospital between July 2007 and July 2008 were collected, VITEK 2 Compact was used to identify and perform antimicrobial susceptibility test, phenotypes were determined by AESTM (Advanced Expert System) of VITEK 2 Compact. Results Among 421 collected isolates, 249 (59.14%) were extended spectrum β lactamases producing (ESBLs) strains, including 67 CTX M producing isolates; 120 (28.50%) were acquired penicillinase producing isolates; 8 (1.90%) were carbapenemase producing isolates; 47 (11.16%) were wild type isolates. The total β lactamases producing rate was 88.84% (374/421). 174 (41.33%) isolates were from mid portion urine, 101 (23.99%) were from sputum; 39 (9.26%) isolates were from renal department, the other isolates were from the other departments. The resistant rates of various phenotypes of E. coli to most antimicrobial agents were quite different; The producing of ESBLs was the main cause of drug resistance of E. coli, the resistant rates of ESBLs producing isolates were higher than acquired penicillinase producing isolates and wild type isolates (P<0.05) and were highly resistant to most antimicrobial agents. Conclusion β lactamases producing rates of E. coli are high, and with various phenotypes, the most common phenotype is ESBLs; The multiply and cross drug resistance of ESBLs producing isolates are serious, and the monitor should be paid attention, antimicrobial application should be used rationally, so as to control the emergence and spread of drug resistant strains.

Keywords: Escherichia coli drug resistant phenotype extended spectrum β lactamases acquired penicillinase carbapenemase drug resistance, microbial antimicrobial susceptibility test antimicrobial agents

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