

· 老年人心力衰竭专栏 ·

## 老年心力衰竭住院患者6288例的病因变迁

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**【摘要】目的** 回顾性地分析老年心力衰竭住院病例的病因变迁, 探讨老年心力衰竭的防治对策。**方法** 从住院病历数据库中检索出1993年1月至2010年12月首次因心力衰竭住院的老年患者6288例, 以6年为时间段分成A、B和C组, 分析比较3组不同性别、年龄患者病因学和住院30d病死率的变迁。**结果** (1) 18年间住院患者数逐年增多, 性别构成方面男性下降, 女性上升; 年龄构成方面60~69岁下降, ≥80岁上升。(2) 高血压病和糖尿病比例增多; 冠心病、陈旧性心肌梗死和肺心病比例下降; 急性心肌梗死、风湿性心脏病、先天性心脏病、贫血和甲亢性心脏病无显著性变化。(3) 诱因中肺炎、房颤的比例上升, 室性心动过速/心室颤动的比例下降。(4) 两种病因、3种及3种以上病因的比例随年龄增高而上升, 但3个时间段间差异无统计学意义。(5) 18年间住院30d病死率逐渐降低, 男性中下降更明显。**结论** 18年间, 老年心力衰竭首次住院患者的病因、诱因或伴随疾病构成比中, 高血压病和糖尿病增多, 冠心病、肺心病比例下降; 肺炎、房颤比例上升; 住院期病死率下降, 其原因值得深入研究。

**【关键词】** 心力衰竭; 病死率; 病因; 老年人

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## Etiological changes in 6288 hospitalized elderly patients with heart failure

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**【Abstract】 Objective** To analyze the etiological changes in the elderly hospitalized patients with heart failure (HF) and investigate the strategies to prevent and treat HF. **Methods** A retrospective study was performed on 6288 patients (4001 males and 2287 females) with a primary diagnosis of validated HF who were consecutively admitted to our hospital during the years of 1993 to 2010. The patients were divided into groups A, B and C with 6 years as interval. The etiological features and 30-day in-hospital mortality were compared in different genders and ages from the above 3 groups. **Results** During the period of 18 years, the number of the inpatients was increased year by year, with the proportion of women increased and men decreased, and the percentage of age 60 to 69 years old declined and over 80 years old risen. Of the 6288 patients, the proportion of accompanied hypertension and diabetes was increased, but that with coronary artery diseases, prior myocardial infarction and cor pulmonale decreased. There was no significant change in the proportions of acute myocardial infarction, rheumatic heart disease, congenital heart disease, anemia and hyperthyroid heart disease. In the inducing factors, the rate of pneumonia and atrial fibrillation was increased, but the rate of ventricular tachycardia and ventricular fibrillation reduced. The ratio of double, triple or more etiological factors was increased with aging, but there was no significant difference over the 3 different periods. The 30-day in-hospital mortality was decreased gradually, especially in males ( $P < 0.01$ ). **Conclusion** During the 18 years, the proportions of patients with hypertension and diabetes as etiological factors are increased significantly, but those of coronary artery disease and cor pulmonale are decreased obviously, and those of pneumonia and atrial fibrillation risen in the elderly patients with heart failure at first hospitalization. There is a significant decline in the 30-day in-hospital mortality among the cohort. The reasons of these findings are worth of further study.

**【Key words】** heart failure; mortality; etiology; aged

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心力衰竭(心衰)是一种复杂的临床症候群,是各种心脏疾病的终末阶段。由于人口老龄化、高血压的高发病率和低控制率、再灌注疗法使大量急性心肌梗死患者得以存活等原因,老年人心衰的发生率日益升高。心衰又是造成老年人死亡的常见原因,其猝死发生率5倍于普通人群<sup>[1]</sup>。如何正确识别和处理老年人心衰,降低其发病率和病死率,是一个重大的医学问题。本研究回顾性地分析了最近18年来解放军总医院老年心衰首次住院病例的病因、诱因或伴随疾病构成比及住院30d病死率的变迁,为制定防治对策提供参考。

## 1 对象与方法

### 1.1 对象

解放军总医院自1993年起建立了以住院病案首页内容为主要项目的计算机管理病案数据库,疾病诊断和手术编码以《国际疾病分类》(ICD9)代码标准录入,经第二人核对,重复信度 $\geq 98\%$ 。从该病历数据库中以ICD9代码428.x检索出1993年1月至2010年12月确诊为心衰、年龄 $\geq 60$ 岁的出院和住院30d内死亡患者的资料,均符合心衰的诊断标准<sup>[2]</sup>,共6 288例,年龄 $(72.7 \pm 7.6)$ 岁,其中男性4 001例,年龄 $(72.7 \pm 7.6)$ 岁;女性2 287例,年龄 $(72.1 \pm 7.7)$ 岁。

### 1.2 方法

根据出院时间分为3个时间段,1993年1月至1998年12月为A组,年龄 $(71.2 \pm 7.2)$ 岁;1999年1月至2004年12月为B组,年龄 $(72.5 \pm 7.8)$ 岁;2005年1月至2010年12月为C组,年龄 $(72.7 \pm 7.7)$ 岁。然后再按年龄分为3个年龄段:60~69岁年龄段,70~79岁年龄段, $\geq 80$ 岁年龄段。根据性别分为男性组和女性组。住院期死亡是指心衰住院期间30d内死亡者。

### 1.3 统计学处理

采用SPSS19统计软件。3个时间段的计数资料比较采用卡方检验,计量资料比较采用ANOVA,两两多重比较用Bonferroni法。 $P < 0.05$ 为差异具有统计学意义。

## 2 结果

### 2.1 老年心衰住院患者情况

B组和C组各年龄段心衰患者显著增多(图1)。构成比中男性比例逐渐降低,女性比例逐渐增高;60~69岁比例逐渐降低, $\geq 80$ 岁者比例增高

( $P < 0.001$ , 图2)。

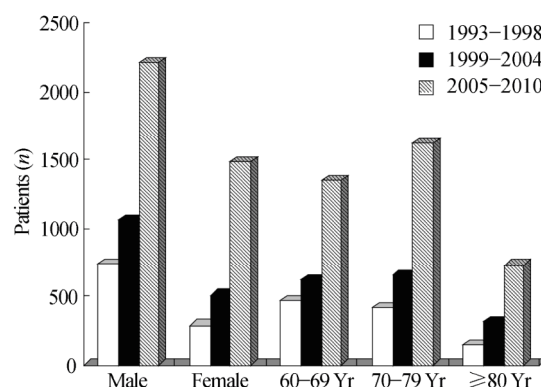


图1 老年心力衰竭患者住院人数增长情况  
Figure 1 Number changes in the elderly with heart failure  
Yr: years

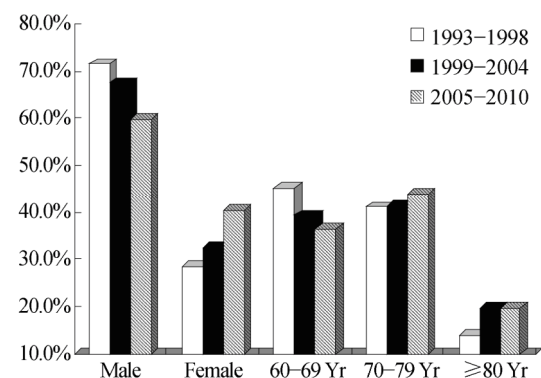


图2 老年心力衰竭住院患者构成比的变迁  
Figure 2 Constituent ratio changes in the elderly with heart failure  
Yr: years

### 2.2 不同性别组病因、诱因和病死率的变迁

B组和C组高血压病和糖尿病比例高于A组。冠心病、陈旧性心肌梗死、肺心病比例降低,急性心肌梗死比例变化不明显。肺炎、房颤比例升高,室性心动过速/心室颤动减少;女性组风湿性心脏病、心肌病比例降低。与A组相比,两种病因和 $\geq 3$ 种病因心衰的比例差异无统计学意义。住院期间病死率逐渐下降(表1)。

### 2.3 不同年龄段间病因、诱因和病死率的变迁

各年龄段B组和C组冠心病和肺心病比例逐渐减少,高血压病增多,风湿性心脏病、心肌病、先天性心脏病、贫血、甲亢、病因数量差异无统计学意义。60~69岁年龄段B组和C组糖尿病比例增多,室速/室颤比例减少。70~79岁年龄段和 $\geq 80$ 岁年龄段B组和C组肺炎比例增多。60~69岁年龄段和70~79岁年龄段B组和C组住院期病死率降低(表2)。心衰患者的病因数量随年龄增高而比例增高(图3),两种病因和 $\geq 3$ 种病因比例70~79岁年龄段和 $\geq 80$ 岁年龄段显著高于60~69岁年龄段。

表1 不同性别组老年心力衰竭患者病因、诱因和病死率的变迁  
Table 1 Changes in etiological, predisposing factors and mortality at different gender groups in elderly patients with heart failure [n(%)]

| Item                       | Total                   |                         |                         | Male                   |                         |                         | Female                 |                        |                         |
|----------------------------|-------------------------|-------------------------|-------------------------|------------------------|-------------------------|-------------------------|------------------------|------------------------|-------------------------|
|                            | 1993-1998<br>(n = 1021) | 1999-2004<br>(n = 1569) | 2005-2010<br>(n = 3698) | 1993-1998<br>(n = 731) | 1999-2004<br>(n = 1061) | 2005-2010<br>(n = 2209) | 1993-1998<br>(n = 290) | 1999-2004<br>(n = 508) | 2005-2010<br>(n = 1489) |
| Coronary artery disease    | 606 (59.4)              | 739 (47.1)              | 1452 (39.3)***          | 474 (64.8)             | 538 (50.7)              | 934 (42.3)***           | 132 (45.5)             | 201 (39.6)             | 518 (34.8)***           |
| PMI                        | 221 (21.6)              | 308 (19.6)              | 619 (16.7)***           | 197 (26.9)             | 251 (23.7)              | 465 (21.1)**            | 24 (8.3)               | 57 (11.2)              | 154 (10.3)              |
| AMI                        | 220 (21.5)              | 307 (19.6)              | 681 (18.4)              | 195 (26.7)             | 250 (23.6)              | 502 (22.7)              | 25 (8.6)               | 57 (11.2)              | 179 (12.0)              |
| Rheumatic heart disease    | 70 (6.9)                | 102 (6.5)               | 224 (6.1)               | 33 (4.5)               | 42 (4.0)                | 97 (4.4)                | 37 (12.8)              | 60 (11.8)              | 127 (8.5)*              |
| Cor pulmonale              | 103 (10.1)              | 131 (8.3)               | 137 (3.7)***            | 64 (8.8)               | 96 (9.0)                | 82 (3.7)***             | 39 (13.4)              | 35 (6.9)               | 55 (3.7)***             |
| Cardiomyopathy             | 61 (6.0)                | 71 (4.5)                | 179 (4.8)               | 37 (5.1)               | 53 (5.0)                | 114 (5.2)               | 24 (8.3)               | 18 (3.5)               | 65 (4.4)*               |
| Hypertension               | 413 (40.5)              | 824 (52.5)              | 2138 (57.8)***          | 285 (39.0)             | 537 (50.6)              | 1249 (56.5)***          | 128 (44.1)             | 287 (56.5)             | 889 (59.7)***           |
| Diabetes                   | 225 (22.0)              | 406 (25.9)              | 1000 (27.0)**           | 152 (20.8)             | 258 (24.3)              | 546 (24.7)              | 73 (25.2)              | 148 (29.1)             | 454 (30.5)              |
| Others                     | 42 (4.1)                | 46 (2.9)                | 150 (4.1)               | 31 (4.2)               | 30 (2.8)                | 82 (3.7)                | 11 (3.8)               | 16 (3.1)               | 68 (4.6)                |
| Pneumonia                  | 130 (12.7)              | 252 (16.1)              | 680 (18.4)***           | 78 (10.7)              | 165 (15.6)              | 396 (17.9)***           | 52 (17.9)              | 87 (17.1)              | 284 (19.1)              |
| VT/VF                      | 70 (6.9)                | 49 (3.1)                | 131 (3.5)***            | 57 (7.8)               | 38 (3.6)                | 88 (4.0)***             | 13 (4.5)               | 11 (2.2)               | 43 (2.9)                |
| Atrial fibrillation        | 239 (23.4)              | 315 (20.1)              | 904 (24.4)**            | 149 (20.4)             | 185 (17.4)              | 500 (22.6)**            | 90 (31.0)              | 130 (25.6)             | 404 (27.1)              |
| Single etiological factor  | 548 (53.7)              | 834 (53.2)              | 1990 (53.8)             | 392 (53.6)             | 574 (54.1)              | 1219 (55.2)             | 156 (53.8)             | 260 (51.2)             | 771 (51.8)              |
| Double etiological factors | 360 (35.3)              | 562 (35.8)              | 1342 (36.3)             | 261 (35.7)             | 363 (34.2)              | 781 (35.4)              | 99 (34.1)              | 199 (39.2)             | 561 (37.7)              |
| Three etiological factors  | 113 (11.1)              | 173 (11.0)              | 366 (9.9)               | 78 (10.7)              | 124 (11.7)              | 209 (9.5)               | 35 (12.1)              | 49 (9.6)               | 157 (10.5)              |
| Mortality rate             | 99 (9.7)                | 122 (7.8)               | 204 (5.5)***            | 70 (9.6)               | 82 (7.7)                | 126 (5.7)**             | 29 (10.0)              | 40 (7.9)               | 78 (5.2)**              |

PMI: prior myocardial infarction; AMI: acute myocardial infarction; Others: hyperthyroid heart disease + anemia + congenital heart disease; VT: ventricular tachycardia; VF: ventricular fibrillation. Compared among three groups, \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

表2 不同年龄组老年心力衰竭患者病因、诱因和病死率的变迁  
Table 2 Changes in etiological, predisposing factors and mortality at different age groups in elderly patients with heart failure [n(%)]

| Item                       | 60-69 years            |                        |                         | 70-79 years            |                        |                         | ≥80 years              |                        |                        |
|----------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|-------------------------|------------------------|------------------------|------------------------|
|                            | 1993-1998<br>(n = 460) | 1999-2004<br>(n = 616) | 2005-2010<br>(n = 1351) | 1993-1998<br>(n = 419) | 1999-2004<br>(n = 646) | 2005-2010<br>(n = 1620) | 1993-1998<br>(n = 142) | 1999-2004<br>(n = 307) | 2005-2010<br>(n = 727) |
| Coronary artery disease    | 222 (48.3)             | 255 (41.4)             | 461 (34.1)***           | 282 (67.3)             | 342 (50.2)             | 661 (40.8)***           | 102 (71.8)             | 160 (52.1)             | 330 (45.4)***          |
| PMI                        | 98 (21.3)              | 109 (17.7)             | 198 (14.7)**            | 97 (23.2)              | 146 (22.6)             | 279 (17.2)**            | 26 (18.3)              | 53 (17.3)              | 142 (19.5)             |
| AMI                        | 98 (21.3)              | 109 (17.7)             | 216 (16.0)*             | 97 (23.2)              | 145 (22.4)             | 310 (19.1)              | 25 (17.6)              | 53 (17.3)              | 155 (21.3)             |
| Rheumatic heart disease    | 57 (12.4)              | 82 (13.3)              | 139 (10.3)              | 13 (3.1)               | 18 (2.8)               | 74 (4.6)                | 0 (0.0)                | 2 (0.7)                | 11 (1.5)               |
| Cor Pulmonale              | 37 (8.0)               | 31 (5.0)               | 30 (2.2)***             | 55 (13.1)              | 65 (10.1)              | 71 (4.4)***             | 11 (7.7)               | 35 (11.4)              | 36 (5.0)**             |
| Cardiomyopathy             | 35 (7.6)               | 49 (8.0)               | 111 (8.2)               | 22 (5.3)               | 21 (3.3)               | 58 (3.6)                | 4 (2.8)                | 1 (0.3)                | 10 (1.4)               |
| Hypertension               | 179 (38.9)             | 281 (45.6)             | 668 (49.4)***           | 171 (40.8)             | 374 (57.9)             | 991 (61.2)***           | 63 (44.4)              | 169 (55.0)             | 479 (65.9)***          |
| Diabetes                   | 94 (20.4)              | 163 (26.5)             | 373 (27.6)**            | 97 (23.2)              | 175 (27.1)             | 437 (27.0)              | 34 (23.9)              | 68 (22.1)              | 190 (26.1)             |
| Others                     | 18 (3.9)               | 18 (2.9)               | 57 (4.2)                | 21 (5.0)               | 16 (2.5)               | 63 (3.9)                | 3 (2.1)                | 12 (3.9)               | 30 (4.1)               |
| Pneumonia                  | 52 (11.3)              | 63 (10.2)              | 151 (11.2)              | 56 (13.4)              | 123 (19.0)             | 309 (19.1)*             | 22 (15.5)              | 66 (21.5)              | 220 (30.3)***          |
| VT/VF                      | 42 (9.1)               | 12 (1.9)               | 44 (3.3)***             | 18 (4.3)               | 27 (4.2)               | 58 (3.6)                | 10 (7.0)               | 10 (3.3)               | 29 (4.0)               |
| Atrial fibrillation        | 114 (24.8)             | 119 (19.3)             | 312 (23.1)              | 92 (22.0)              | 128 (19.8)             | 412 (25.4)*             | 33 (23.2)              | 68 (22.1)              | 180 (24.8)             |
| Single etiological factor  | 272 (59.1)             | 344 (55.8)             | 782 (57.9)              | 207 (49.4)             | 327 (50.6)             | 846 (52.2)              | 69 (48.6)              | 163 (53.1)             | 362 (49.8)             |
| Double etiological factors | 146 (31.7)             | 221 (35.9)             | 453 (33.5)              | 160 (38.2)             | 231 (35.8)             | 604 (37.3)              | 54 (38.0)              | 110 (35.8)             | 285 (39.2)             |
| Three etiological factors  | 42 (9.1)               | 51 (8.3)               | 116 (8.6)               | 52 (12.4)              | 88 (13.6)              | 170 (10.5)              | 19 (13.4)              | 34 (11.1)              | 80 (11.0)              |
| Mortality rate             | 37 (8.0)               | 29 (4.7)               | 37 (2.7)***             | 45 (10.7)              | 56 (8.7)               | 85 (5.2)***             | 17 (12.0)              | 37 (12.1)              | 82 (11.3)              |

PMI: prior myocardial infarction; AMI: acute myocardial infarction; Others: hyperthyroid heart disease + anemia + congenital heart disease; VT: ventricular tachycardia; VF: ventricular fibrillation. Compared among three groups, \* $P < 0.05$ , \*\* $P < 0.01$ , \*\*\* $P < 0.001$

3 讨 论

心衰是各种心脏疾病的终末阶段。据统计,50~

59岁心衰的患病率为1%,≥80岁者高达10%。在50~89岁的人群中,年龄每增加10岁,其患病率增加1倍<sup>[1]</sup>。老年患者占心衰总数的75%。本资料显示近18

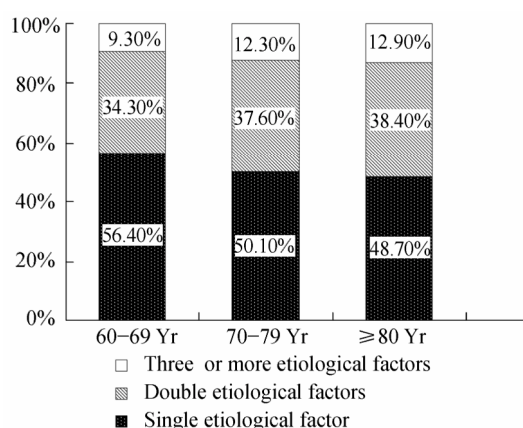


图3 不同年龄段心力衰竭住院患者病因数构成比  
Figure 3 Constituent ratio of number of etiological factors in the different ages of patients with heart failure  
Yr: years

年来心衰住院人数逐渐增多, 高龄老人在心衰住院构成比中显著增加。这与文献报道一致<sup>[3,4]</sup>。其原因是由于人口老龄化、高血压的高发病率和低控制率、再灌注疗法使大量急性心肌梗死患者得以存活等。

国外研究显示心衰病因中冠心病和高血压占90%左右, 本组资料中, 冠心病占44.5%, 高血压病占53.7%。18年间高血压病从40.5%增加到57.8%, 糖尿病从22.0%增加到27.0%, 冠心病从59.4%降至39.3%, 肺心病从10.1%降至3.7%。男性组陈旧性心肌梗死、室性心动过速/心室颤动比例降低, 肺炎、房颤比例升高; 女性组风湿性心脏病、心肌病比例降低。不同年龄段风湿性心脏病、心肌病、先天性心脏病、贫血、甲亢、病因数量差异无统计学意义。60~69岁年龄段糖尿病比例增多, 室性心动过速/心室颤动比例减少。70~79岁年龄段和≥80岁年龄段肺炎比例增多。60~69岁年龄段和70~79岁年龄段住院期间病死率降低。这与《中国部分地区1980、1990、2000年慢性心力衰竭住院病例回顾性调查》<sup>[5]</sup>基本一致。Owan等<sup>[6]</sup>调查发现, 15年期间心衰患者中高血压病、心房颤动和糖尿病患者比例有增高趋势。Steinberg等<sup>[7]</sup>报道2005~2010年间, 左室射血分数正常的心衰患者住院期间病死率逐年降低。Roger等<sup>[8]</sup>社区人群调查发现心衰患者存活率提高, 但在女性和高龄患者中改善不明显。本研究高血压患者比例较高, 可能与本研究对象均为老年人有关。Klapholz等<sup>[9]</sup>报道, 左室射血分数正常的心力衰竭患者中, 78%合并有高血压病。我们也注意到, 因心衰住院治疗的老年患者中, 年龄越大, 病因数量越多。两病因中以冠心病和高血压病共存最多见。三病因中以冠心病、高血压病和糖尿病共存最多见。四病因中以冠心病、高血压病、糖尿病和肺心病共存常见。≥3种病因患者住院30d病死率高于其他患

者。这与我们以前的研究报道一致<sup>[10]</sup>。

本调查观察到, 心衰诱因中肺炎比例呈上升趋势, ≥70岁老年人及≥80岁高龄老年人中上升更为显著。心房颤动的比例也呈上升趋势, 在男性中尤为显著。肺炎和心房颤动是老年人发生心衰的主要诱因<sup>[11]</sup>。

近年来, 随着医学科学技术的进步, 新理念、新方法和新技术的应用, 心力衰竭的住院期病死率呈现出下降趋势<sup>[12]</sup>。本研究结果与此一致。

由于本资料年代跨度大, 存在一定的限制, 许多因素对观察指标产生了难以控制的影响; 由于是回顾性研究, 全部是住院患者, 结论不能代表社区人群的分布情况, 仅供临床参考。

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- (编辑: 王雪萍)

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