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Research Article

A comparatıve study of the rare but deadly ınfectıon: post-sternotomy mediastınıtıs and descendıng necrotızıng mediastınıtıs wıth an analysıs of outcome-determınıng factors

Nadir ancak ölümcül bir enfeksiyon üzerine karşılaştırmalı bir çalışma: Post-sternotomi mediastinit ve descending nekrotizan mediastinitte sonucu belirleyici faktörlerin analizi

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Abstract

Aim: Mediastinitis, a rare yet serious infection, affects the mediastinum. This study aims to compare the demographic, clinical, and laboratory characteristics of patients diagnosed with post-sternotomy mediastinitis (PSM) or descending necrotizing mediastinitis (DNM) to identify features of non-surviving patients.

Material and Methods: This study included patients diagnosed with PSM and DNM between 2015 and 2022 at the Health Sciences University Dışkapı Yıldırım Beyazıt Training and Research Hospital Patients were categorized and compared as survivors and non-survivors.

Results: This study included 25 patients diagnosed with mediastinitis. The average age was 54.9 ± 12.1, with 64% being male. Blood cultures were obtained from 92% of patients. Purulent discharge cultures were sent for 88% of patients, with 44% showing growth. Comorbidities were present in 84% and the prevalence of comorbidities, sepsis, and intensive care unit (ICU) hospitalization after diagnosis was significantly higher in PSM patients (p=0.017, p=0.004, p=0.026). Heart failure, coronary artery disease (CAD), and hypertension (HT) were significantly higher in PSM patients (ps=0.000). PSM patients were also significantly more common in the non-survivor group (p=0.012). The non-survivor group had higher average age, more smokers, and longer intensive care unit stays post-diagnosis (p=0.046, p=0.049, p=0.038). Patients with PSM, HT, and CAD were significantly more common in the non-survivor group (p=0.012, p=0.008, p=0.033).

Conclusion: Mediastinitis is a rare but serious condition with high mortality and morbidity rates. In patients with a higher risk of mortality, such as the elderly, smokers, patients with median sternotomy, and those with comorbidities, treatment and follow-up strategies can be improved.

Keywords: Mediastinitis, post-sternotomy mediastinitis, descending necrotizing mediastinitis, comorbidities, mortality

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Öz

Amaç: Mediastinit; nadir görülen ciddi bir enfeksiyondur. Bu çalışmanın amacı, post-sternotomi mediastinit (PSM) veya descending nekrotizan mediastinit (DNM) tanısı alan hastaların demografik, klinik ve laboratuvar özelliklerini karşılaştırmak ve mortalite görülen hastaların özelliklerini belirlemektir.

Gereç ve Yöntemler: Bu çalışmaya 2015-2022 yılları arasında Sağlık Bilimleri Üniversitesi Dışkapı Yıldırım Beyazıt Eğitim ve Araştırma Hastanesi'nde PSM ve DNM tanısı alan hastalar dahil edilmiştir. Hastalar hayatta kalanlar ve kalamayanlar olarak kategorize edilmiştir ve karşılaştırılmıştır.

Bulgular: Bu çalışmaya mediastinit tanısı konulan 25 hasta dahil edilmiştir. Ortalama yaş 54.9 ± 12.1 olup, hastaların %64'ü erkekti. Hastaların %92'sinden kan kültürü alınmıştır. Hastaların %88'inden pürülan akıntı kültürleri gönderilmiştir, %44'ünde üreme tespit edilmiştir. Hastaların %84'ünde komorbidite mevcuttur ve komorbidite varlığı, sepsis varlığı ve tanı sonrası yoğunbakım ünitesinde (YBÜ) yatış günü prevalansı PSM hastalarında anlamlı olarak daha yüksekti (p=0.017, p=0.004, p=0.026). Kalp yetmezliği, koroner arter hastalığı (KAH) ve hipertansiyon (HT) PSM hastalarında anlamlı olarak daha yüksekti (ps=0.000). PSM hastaları; hayatta kalamayan grupta da anlamlı olarak daha yaygındı (p=0.012). Hayatta kalamayan grupta yaş ortalaması daha yüksek, sigara içenlerin sayısı daha fazla ve tanı sonrası YBÜ'de kalma süresi daha uzundu (p=0,046, p=0,049, p=0,038). PSM, HT ve KAH olan hastalar hayatta kalamayan grupta anlamlı olarak daha yaygındı (p=0.012, p=0.008, p=0.033).

Sonuç: Mediastinit; nadir görülen ancak yüksek mortalite ve morbidite oranlarına sahip ciddi bir enfeksiyondur. Yaşlılar, sigara içenler, median sternotomi yapılanlar ve komorbiditeleri olanlar gibi mortalite riski daha yüksek olan hastalarda tedavi ve takip stratejileri geliştirilebilir.

Anahtar Kelimeler: Mediastinit, post-sternotomy mediastinitis, descending necrotizing mediastinitis, comorbidity, ölüm

Introductıon

Mediastinitis, a rare yet serious infection, affects the mediastinum, an area in the thorax's center surrounded by the sternum and costal cartilages at the front, thoracic vertebral bodies at the back, and the lungs and pleurae laterally [1]. Mediastinitis can arise from various origins, such as deep sternal wound infections post-sternotomy, ruptures in the esophagus, or descending necrotizing mediastinitis (DNM) [2]. Before the advancement of cardiovascular surgery and the widespread use of antibiotics, mediastinitis often resulted from esophageal perforations or the spread of head and neck infections to the mediastinum. However, it most commonly develops in modern times after cardiovascular surgical procedures [3].

Post-sternotomy mediastinitis (PSM) after open heart surgery, also commonly called deep sternal wound infection, is an infrequent, but potentially devastating complication with high morbidity, prolonged hospitalization, increased costs, as well as increased mortality [4]. Despite advances in prevention and treatment strategies, its incidence remains significant and ranges between 0.25% and 5% [5]. DNM originates from a head and neck stroke, mostly an odontogenic or oropharyngeal focus, extends via the deep fascial planes, and descends into the mediastinum [6]. While DNM is less common in the etiology of mediastinitis compared to PSM, it carries a high mortality rate, reported between 11% and 40% [5]. This is due to the rapid progression of mediastinal infection to sepsis and multiorgan failure if not promptly and adequately treated [5,7].

Early diagnosis and optimal antibiotic treatment are crucial for mediastinitis survival [8]. Previous studies have assessed the demographic characteristics, and clinical, and laboratory findings of patients with PSM or DNM. However, research comparing patients based on the type of mediastinitis is quite limited in the literature [7,9]. Identifying patients at risk, understanding outcome characteristics, and detecting variations based on mediastinitis type are crucial for identifying at-risk individuals and predicting mortality. This study aims to compare the demographic, clinical, and laboratory characteristics of patients diagnosed with DNM or PSM to identify features of non-surviving patients.

Materıal and Methods

This study included patients diagnosed with PSM and DNM between 2015 and 2022 at the Health Sciences University

Dışkapı Yıldırım Beyazıt Training and Research Hospital. Inclusion criteria were: diagnosis of mediastinitis made at this hospital, inpatient follow-up until discharge or death in the hospital, consultation with Infectious Diseases and Clinical Microbiology, initiation of intravenous (IV) antibiotic therapy, and being over 18 years of age. Exclusion criteria were: being transferred to another hospital or discharged from follow-up after diagnosis, exclusion of the mediastinitis diagnosis after the commencement of treatment, and being under 18 years of age. Patients were divided into two groups: those with an infection in the head and neck region, and those that develop within one month of diagnosis are classified as descending necrotizing mediastinitis [7]. In contrast, those who developed mediastinitis within three months post-cardiovascular surgery were considered to have mediastinitis secondary to the surgical procedure [1].

Patients were diagnosed according to the Centers for Disease Control and Prevention (CDC) definitions of mediastinitis [10]. The presence of mediastinitis was accepted in patients meeting at least one of the following criteria.

- Patient has organism(s) identified from mediastinal tissue or fluid by a culture
- Patient has evidence of mediastinitis on gross anatomic or histopathologic exam
- Patient has at least one of these signs or symptoms (fever (>38.0°C), chest pain, or sternal instability) and at least one of the following: purulent drainage from the mediastinal area or mediastinal widening on imaging test.

Cultures of purulent discharge obtained from the surgical area or the anterior mediastinal space in cases of sternal separation, either through needle aspiration or directly during surgical repair, were analyzed. Blood cultures were collected and evaluated for both aerobic and anaerobic bacteriological analysis. The study assessed the results of these cultures to guide the empirical antimicrobial treatments, which were initiated based on the type of mediastinitis, predisposing factors, and the suspected causative organisms. Patients discharged were considered survivors, while those who died within three months of diagnosis or during hospitalization were deemed non-survivors. Demographic characteristics (age, gender, presence of comorbidity, smoking), clinical findings (presence of fever, sepsis), and laboratory results (white blood cells, neutrophil, lymphocyte, c-reactive protein, sedimentation, procalcitonin) at the time of diagnosis for all patients were evaluated. The data for the study were retrieved retrospectively from the hospital information management system. This study has received ethical approval from the Ankara Etlik City Hospital Ethics Committee (approval no: AEŞH-EK1-2023-491, approval date: 06.09.2023).

Statistical analysis

IBM SPSS ver. 22 was utilized for statistical analysis. Categorical variables were represented as numbers and percentages, while continuous variables were shown as mean ± standard deviation. The Chi-square or Fisher's exact test was applied to categorical data, and the Kolmogorov–Smirnov test assessed the normality of continuous variables. Depending on the data's distribution, either the Student's t-test or the Mann–Whitney U test compared continuous variables. Significance was set at 0.05.

Results

This study included 25 patients diagnosed with mediastinitis. The average age was 54.9 ± 12.1, with 64% being male. The diagnosis of PSM was confirmed by the cardiovascular surgery clinic in 60% and DNM by the otorhinolaryngology clinic in 40%. Comorbidities were present in 84% and the prevalence of comorbidities, sepsis, and ICU hospitalization after diagnosis was significantly higher in PSM patients (p=0.017, p=0.004, p=0.026). Heart failure, coronary artery disease, and hypertension were significantly higher in PSM patients (ps<0.000). PSM patients were also significantly more common in the non-survivor group (p=0.012) (Table 1). Blood cultures were obtained from 92% of patients, with one PSM patient having methicillin-resistant S. aureus (MRSA) and one DNM patient having methicillin-susceptible S. aureus (MSSA) growth. Purulent discharge cultures were submitted for 88% of the patients, with growth observed in 11 (44%) patients. Polymicrobial growth was noted in one patient, while monomicrobial growth was identified in ten patients. A total of 12 bacterial agents were isolated, with 50% being gram-positive. Mortality was recorded at 66.6% among patients with both gram-positive and gram-negative infections. No significant differences were found in mortality rates between patients with gram-negative and gram-positive bacterial growths (p=0.248). Cultures from purulent discharges in seven patients diagnosed with DNM showed growth, with gram-positive bacteria identified in five (71.4%) of these cases. Conversely, cultures from five patients with PSM showed growth, with four (80%) of these isolates being gram-negative.

Table 1. Evaluation of demographic characteristics, clinical, and laboratory findings of patients diagnosed with mediastinitis.

	Post-sternotomy mediastinitis n (%)	Descending necrotizing mediastinitis n (%)	Total n (%)	p-value
	n:15 (60)	n:10 (40)	n:25 (100)	
Age (mean ± ss)	58.3 ± 7	48.8 ± 16.3	54,9 ±12.1	0.109
Gender				
Male	10 (66.7)	6 (60)	16 (64)	0,735
Presence of comorbidity	15 (60)	6 (24)	21 (84)	0.017
Diabetes mellitus	7 (28)	3 (12)	10 (40)	0.405
Heart failure	15 (60)	2 (8)	17 (68)	0.000
Hypertension (HT)	15 (60)	3 (12)	18 (72)	0.000
Coronary artery disease	15 (60)	1 (4)	16 (64)	0.000
Others	8 (32)	6 (24)	14 (56)	0.775
Smoking	6 (24)	4 (16)	10 (40)	1
Fever	13 (52)	6 (24)	19 (76)	0.175
Presence of Sepsis	11 (44)	1 (4)	12 (48)	0.004
Presence of wound discharge	13 (52)	5 (20)	18 (72)	0.075
Thoracic/Mediastinal drainage	10 (40)	4 (16)	14 (56)	0.241
Hospitalization (day) (mean ± ss)	39.2 ± 23.2	35.5 ± 18.1	37.7 ± 20.9	0.675
Intensive care unit (day)	13.6 ± 8.6	6.2 ± 10.8	10.6 ± 10	0.026
Intravenous antibiotic treatment (day) (mean ± ss)	31 ± 13.4	33.9 ± 17.4	32.2± 14.9	0.643
Empirical Treatment Vancomycin + imipenem/meropenem Teicoplanin + imipenem/meropenem Linezolid + imipenem/meropenem Daptomycin + imipenem/meropenem Ceftazidime + vancomycin Piperacillin-tazobactam + teicoplanin	 3 (12) 5 (20) 4 (16) 2 (8) 0 1 (4)	 4 (16) 1 (4) 3 (12) 1 (4) 1 (4) 0 (4)	 7 (28) 6 (24) 7 (28) 3 (12) 1 (4) 0 (4)	0.589
Outcome Survive Non-survive	 5 (20) 10(40)	 9 (36) 1(4)	 14 (56) 11(44)	0.012
Laboratory findings (mean ± ss)				
White Blood Cells, 10^3/µL	15006.7 ± 6866.7	14587 ± 6218.8	14838.8±6484.7	0.849
Neutrophil, 10^3/µL	12080 ± 6727	11645 ± 5506.8	11906 ±61495	0.867
Lymphocyte, 10^3/µL	2165.3 ± 1798.9	1128 ± 794.2	1750.4 ±1547.5	0.101
C-reactive protein, mg/L	239.3 ± 73.1	230.6 ± 109.8	235.8±87.5	0.814
Sedimentation, mm/h	50.9 ± 18	53 ± 23.2	51.72 ±19.8	0.798
Procalcitonin, µg/L	6 ± 8.7	4.4 ± 4.2	5.7 ±7.4	0.589

Among those with culture growth, pathogens in nine patients were sensitive to empirical treatment, while two patients had pathogens resistant to it (Table 2). Acinetobacter baumannii growth was detected in one of the patients. The empirical meropenem treatment was discontinued and colistin treatment was initiated. In the other patient, only amikacin-susceptible Pseudomonas aeruginosa growth was identified and amikacin treatment was added to the empirical meropenem treatment.

Patients diagnosed with mediastinitis were divided into two groups: survivors and non-survivors, for comparison. While 66.6% of patients with PSM were non-survivors, 10% of patients with DNM were non-survivors. The non-survivor group had higher average age, more smokers, and longer ICU stays post-diagnosis (p=0.046, p=0.049, p=0.038). Patients with PSM, coronary artery disease (CAD), and hypertension (HT) were significantly more common in the non-survivor group (p=0.012, p=0.008, p=0.033).

Table 2. Bacterial growth and resistance profiles in patients' bacterial cultures

Case number	Mediastinitis type	Positive culture type	Microorganism	Positive culture type
1	PSM	Discharge	Acinetobacter baumannii	S: Colistin, TMP-SMX R:Amikacin, ciprofloxacin, gentamicin, meropenem, imipenem
2	DNM	Discharge	Staphylococcus aureus	S: Oxacillin, gentamicin, TMP-SMX, ciprofloxacin, clindamycin R: Ampicillin, penicillin
			Klebsiella pneumoniae	S: AMC, ciprofloxacin, gentamicin, TMP-SMX, meropenem, imipenem R: Ampicillin, ceftriaxone, piperacillin, tigecycline
3	DNM	Discharge, Blood	Staphylococcus aureus	S: Amikacin, Gentamycin, Fusidic acid R: Cefoxitin, ciprofloxacin, clindamycin, erythromycin
4	DNM	Discharge	Klebsiella pneumoniae	S: AMC, ceftriaxone, cefepime, ciprofloxacin, piperacillin tazobactam, imipenem, meropenem R: Amikacin, gentamicin, TMP-SMX
5	DNM	Discharge	Streptococcus anginosus	S: Penicillin, ceftriaxone, clindamycin, cefepime
6	PSM	Discharge	Acinetobacter baumannii	S: Meropenem, imipenem, gentamicin, ciprofloxacin, TMP-SMX, amikacin R: Colistin
7	PSM	Discharge	Serratia ficaria	S: AMC, ceftriaxone, ciprofloxacin, piperacillin, gentamicin, tigecycline, TMX-SMX, meropenem R: Cefazolin, cefoxitin
8	PSM	Discharge, Blood	Staphylococcus aureus	S: Fusidic acid, gentamicin, moxifloxacin, oxacillin, linezolid R: Penicillin, ciprofloxacin
9	DNM	Discharge	Streptococcus anginosus	S: Penicillin, ceftriaxone, clindamycin, cefepime
10	DNM	Discharge	Streptococcus constellatus	S: Penicillin, ceftriaxone, clindamycin, cefepime
11	PSM	Discharge	Pseudomonas aeruginosa	S: Amikacin R: Piperacillin tazobactam, ciprofloxacin, cefepime, imipenem, meropenem,

PSM: Post-sternotomy Mediastinitis, DNM: Descending Necrotizing Mediastinitis, TMP-SMX: Trimethoprim-sulfamethoxazole, AMC: Amoxicillin-clavulanic acid, S: susceptible, R: resistant

Discussion

Mediastinitis is a rare infectious disease, and this study evaluated patients diagnosed with PSM and DNM. PSM was diagnosed in 60% of all patients and 84% had comorbidities. The presence of comorbidities, sepsis, and post-diagnosis ICU care was higher in PSM patients. Of patients with PSM, 66.6 percent died, and the survival rate was lower than DNM. Mortality was higher in older patients with sepsis, prolonged post-diagnosis ICU care, hypertension, and smokers. Host factors, such as immunologic status and comorbidities affect the risk of infections [11]. In this study, patients with PSM had a higher rate of comorbidities, heart failure, coronary artery disease, and hypertension compared to those with DNM. Median sternotomy is typically used in cardiac surgery to treat cardiovascular comorbidities [9]. Consequently, it's common for patients with PSM to have more comorbid and cardiac conditions.

In a study compiling PSM patients, having coronary artery disease was considered a host risk factor for developing mediastinitis [4]. Another study evaluating 44 patients with mediastinitis post-coronary artery bypass graft surgery identified hypertension as a risk factor for mediastinitis development. The heart itself is seen as an important immune station, able to fine-tune the function of the immune system using specific cardiokines [12]. The unfavorable survival outcomes in PSM patients may be attributed to their inadequate host immune response due to cardiac comorbidities, rendering them at a higher risk for developing mediastinitis.

Mediastinitis can lead to serious complications with high mortality rates, such as sepsis or septic shock. [13]. Sepsis is a manifestation of the immune and inflammatory response to infection, which may lead to multi-organ failure [14]. The heart may suffer from rhythm changes, pericardial effusion, cardiac tamponade, cardiomyopathy, coronary artery heart disease, hypertension, and cardiac autonomic dysfunction during systemic infections [15]. In this study, no significant differences were found in laboratory findings, length of hospital stay, and the choice of empirical antibiotics between PSM and

Table 3. Comparative analysis of follow-up outcomes in mediastinitis

	Non-survive n (%)	Survive n (%)	p-value
	n:11 (44)	n:14 (56)	
Age (mean ± ss)	60 ± 8.7	50.2 ± 13.3	0,046
Gender Male	8 (32)	8 (32)	0.677
Mediastinitis types Descending necrotizing mediastinitis Post-sternotomy mediastinitis	1 (4) 10 (40)	9 (36) 5 (20)	0.012
Presence of comorbidity	11 (44)	10 (40)	0.105
Diabetes mellitus	5 (20)	5 (20)	0.697
Hypertension	11 (44)	7 (28)	0.008
Heart failure	11 (44)	6 (24)	0.487
Coronary artery disease	10 (40)	6 (24)	0.033
Smoking Yes	7 (28)	3 (12)	0.049
Presence of sepsis	9 (36)	3 (12)	0.005
Presence of wound discharge	8 (32)	10 (40)	0.944
Thoracic/mediastinal drainage	5 (20)	9 (36)	0.435
Growth in blood culture	2 (8)	0 (0)	0.487
Growth in discharge culture	7 (28)	6 (24)	0.072
Gram-positive growth	4 (16)	2 (8)	0.429
Gram-negative growth	4 (16)	2 (8)	0.429
Intravenous antibiotic treatment (day) (mean ± ss)	28.5 ± 13.7	35 ± 15.6	0.291
Hospitalization (day) (mean ± ss)	36.2 ± 23.8	38.9 ± 19.2	0,752
Intensive care unit (day) (min-max)	15.4 ± 9.4 (0-28)	6.9 ± 9.1 (0-30)	0.038
Usege of carbapenems in treatment. Yes No	9 (36) 2 (8)	14 (56) 0 (0)	0.183
Usage of glycopeptides	8 (32)	6 (24)	0.227
Usage of Linezolid- Daptomycin	3 (12)	8 (32)	

DNM patients. However, the presence of sepsis, the average duration of ICU stay, and the mortality rate were higher in PSM patients. Surgical trauma, cardiopulmonary bypass, and ischaemic cardiac arrest during cardiac surgery

may induce innate immune response activation [16]. Organ injury influencing the heart, brain, lungs, or kidneys occurs in up to 40% of people who undergo cardiac surgery, where it precedes the majority of deaths [17]. The poor prognosis of mediastinitis in PSM patients may be due to the negative effect of previous surgery and the presence of more cardiac comorbidities.

In a study evaluating 34 patients diagnosed with DNM, prolonged ICU stay was found to be associated with increased mortality [18]. In another study examining 20 patients who underwent open heart surgery and developed PSM, it was found that patients who died had a longer ICU stay [19]. In this study, patients with mediastinitis who had a mortal course also had a longer ICU stay. Aging is linked to various health issues that eventually result in organ failure and mortality. In a study evaluating 44 patients who developed mediastinitis after coronary artery bypass surgery, age was reported to be a predictor for the development of mediastinitis [9]. In a study examining patients who developed mediastinitis after open-heart surgery, it was found that the average age of the patients who died was higher [19]. A prospective study examining 34 patients diagnosed with DNM also found a relationship between advanced age and increased mortality [18]. In this study, the average age is also higher in the non-survival group. These results may be related to the fact that elderly individuals become susceptible to infections with the progressive deterioration of protective immunity [20].

Post-operative pulmonary complications are prevalent among smokers because their immune responses are weakened, and the likelihood of infections is increased due to altered nasopharyngeal flora in these patients [21]. It's advised that, when feasible, patients should stop smoking at least 30 days before surgery [22]. In many previous studies, smoking has been identified as a risk factor for PSM [4,23]. In this study, a significantly higher proportion of smokers was found in the non-survival group.

When a clinical suspicion or confirmation of mediastinitis arises, potent intravenous antibiotic treatment should commence following a blood culture [3]. This treatment should be designed to effectively target both Gram-positive and Gram-negative bacteria, and include coverage for anaerobes. Additionally, microbial identification and antibiotic susceptibility should be determined at the earliest opportunity [5].

In this study, only 11 (44%) patients had growth in purulent discharge culture, and 12 different agents were detected. In a previous study of 88 patients with DNM, 65.7% of the patients grew Streptococcus spp. and gram-positive bacteria were predominant in the culture findings [6]. Another study of 34 patients with DNM isolated Viridans streptococci (S. constellatus, S. sanguis, S. mitis) in seven cases (29%) and Peptostreptococcus spp. In three cases (12%) [20]. In this study, five of the six patients with DNM who had growth in purulent discharge culture had gram-positive growth. These findings may be because DNM frequently originates from infections in the head and neck region and the predominance of gram-positive bacteria in the flora of this region. In a review of 63 studies including patients with PSM, 3724 agents were isolated and 2958 (79.4%) were gram-positive [24]. In a Chinese study involving 170 patients with PSM, the organisms isolated were Gram-negative bacteria (55.4%), MSSA (20.4%), coagulase-negative Staphylococcus (14%), MRSA (5.7%) and fungi (3.8%) [25]. In this study, purulent discharge cultures of five patients with PSM grew and four of them were gram-negative. The variation in the findings of the literature may be because PSM occurs after cardiac surgery, and hospital flora might have a role in the cause of PSM and these agents may differ between hospitals.

In this study, all patients were started on broad-spectrum empirical antibiotic therapy, but in two patients diagnosed with PSM, the pathogen grown was found to be resistant to empirical treatment. These results suggest that in patients diagnosed with PSM, the bacterial profile and antibiotic resistance pattern of the hospital should also be considered when administering empirical treatment.

Limitations

The retrospective nature and the limited patient sample from a single center inherently introduce selection bias, indicating that our results might not entirely reflect the broader population of patients with mediastinitis. Additionally, the specific areas of mediastinitis involvement, surgical interventions beyond thoracic and mediastinal drainage performed after diagnosis, and arising complications were not assessed.

Conclusion

Mediastinitis is a rare but serious condition with high mortality and morbidity rates. The early identification of patients at high risk and the implementation of preventive measures are crucial. Initiating rapid and appropriate antibiotic therapy is vital for controlling the disease. The treatment and follow-up strategies can be improved in patients with a higher risk of mortality, such as the elderly, smokers, patients with median sternotomy, and those with comorbidities.

Conflict of interest statement

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