

## 中文摘要

目前慢性阻塞性肺病及缺血性心臟病是世界上越來越重要的公共衛生議題。近年來，隨著台灣地區人口年齡結構的老化，此兩種疾病對國人的健康威脅日與俱增。在許多不同國家及氣候型態不同的地區都曾有文獻報告指出此兩種疾病的發生率與死亡率皆會隨著季節及環境溫度而有所變化。因此，本研究之目的在探討國人慢性阻塞性肺病及急性冠狀動脈症候群之發作與大氣溫度變化之關聯性。本研究是以中部某醫學中心急診室於民國八十九年一月一日至民國九十二年三月三十一日間所收治的病患為研究對象，探討此兩種疾病的發作是否會隨著環境溫度變化而有所不同。利用卜瓦松(Poisson)複迴歸模式控制季節、假日、氣象因子以及空氣污染物等變項，分析病患就醫人次與當日最高溫度、最低溫度、平均溫度及溫差之間的關係。結果顯示，溫度越低慢性阻塞性肺病就醫的危險性越高並且在統計上呈現顯著的相關性。在每日最高溫度低於 30.0 的情況下，慢性阻塞性肺病的就醫危險性比每日最高溫度高於 32.2 時多出約 30%；在每日最低溫度低於 18.9 的條件下，慢性阻塞性肺病的就醫危險性比每日最低溫度高於 25.5 時多出約 70%；在每日平均溫度低於 22.3 的條件下，慢性阻塞性肺病的就醫危險性比平均溫度高於 28.4 時多出約 35%。雖然急性冠狀動脈症候群的就醫人次與每日最高溫度、最低溫度及平均溫度之間的關係在統計上並不顯著，但是仍有環境溫度越低就醫的危險性越大的趨勢。當每日溫差高於 9.0 的條件下，急性冠狀動脈症候群就醫的危險性比溫差低於 5.5 時多出 19.4%，溫差越大發病的危險性越大，但是慢性阻塞性肺病則無此現象。本研究顯示，慢性阻塞性肺病及缺血性心臟病患者在低溫以及溫差大的環境下，易造成慢性阻塞性肺病惡化及急性冠狀動脈症候群發

作。在寒冷以及溫差大的季節裡，慢性阻塞性肺病或缺血性心臟病的患者要做好日常防寒的工作，醫院及醫療衛生單位也必須將季節性及環境溫度的變動做為醫療照護體系之事前防範與急診醫療人力參考之依據。

關鍵詞：慢性阻塞性肺病、急性冠狀動脈症候群、缺血性心臟病、就醫人次、環境溫度、最高溫度、最低溫度、平均溫度、溫差、季節

## 英文摘要

Chronic obstructive pulmonary disease (COPD) and ischemic heart disease (IHD) are important public health problems in the world. The mortality from COPD and IHD have been related to meteorologic factors in studies, but whether a cold environment is associated with acute exacerbation of COPD or acute coronary syndrome (ACS) is not well known. This study examined the relationship between environmental temperature and acute exacerbation of COPD and ACS attack.

The purpose of this study was to assess the association between ambient temperature and emergency room (ER) visits for COPD and ACS in an ER in Taichung. The design was a longitudinal study in which examined the relationship between highest daily temperature (HDT), lowest daily temperature (LDT), mean of daily temperature (MDT), variation of daily temperature (VDT) and the visits of COPD and ACS to the ER of the city's largest hospital. Daily ER visits for COPD, ACS and ambient temperature were collected from January 1, 2000 to March 31, 2003. The multivariate Poisson regression model was used in the analysis.

After adjusting for the effects of holiday, season, and air pollutants the results showed that there was a negative significant association between HDT, LDT, MDT and COPD visits. The risk of COPD visits increased 30% when HDT below 30.0 , compared with 32.2 or greater. There were 70% excess risk of COPD visits when LDT below 18.9 , compared with LDT higher than

25.5 . When MDT below 22.3 the risk of COPD visits raised 35%, compared with MDT above 28.4 . The ambient temperature played an important role in COPD morbidity but not in ACS. A positive association between VDT and ACS visits was noted but no significant association between VDT and COPD visits. The risk of ACS visits increased 19.4% when VDT was 9.0 or greater, compared with VDT below 5.5 .

The data indicate that patients with COPD or IHD must be made aware of the increased risk posed by lower ambient temperature and larger temperature change. Hospitals and ERs should take into account the increased demand of specific facilities during colder weather and larger temperature variation.