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## Abstract

This study has been done on two groups of individuals for the isolation of *Haemophilus influenzae* from sputum. The first group of study include 50 individual patients presented with pneumonia, whilst the second group included tuberculosis patients, and those who are suspected to have tuberculosis (359) individual; The age range in both groups lie between (3-73year). Collection of the specimens was done within eight months from (April-Decimber) through 2003 from Khartoum state, and Elobied city in North Kordofan state.

Nine strains of *Haemophilus influenzae* were isolated from the specimens. The percentage of *Haemophilus influenzae* isolated from the specimens was 2.2%. The percentage of  $\beta$ -Lactamase producing strains of *Haemophilus influenzae* type b, was found to be 42.9%. The percentage of type b *Haemophilus influenzae* was 77.8% of the total strains of Haemophilus isolated.

Furthermore, the relationship between the isolation of the organism, and the season, type of media, and age groups has been detected. The organism has been isolated in Autumn and Winter (one strain late Autumn, and eight strains in Winter), whereas no isolation took place in Summer; (**GC nagar**) was found to be the best medium for isolation compared to Chochalate agar. Children (3-18year) and elderly(67-73year) were the most affected groups.

The study proved that the organism can be preserved in (4-8) °C for about (10-15) days.

# ملخص الأطروحة

أجريت الدراسة على مجموعتين من الأشخاص بغرض عزل المستدمية النزلية الوافدة من أسفل الجهاز التنفسي ثم تحديد نسبة مقاومتها للصيادلات الحيوية، وذلك بفحص عينات التفاف مختبريا، هذا وقد شملت المجموعة الأولى أشخاص مصابون بالالتهاب الرئوي وقد كان عددهم (50) شخص من مجموع (409) شخص، أما المجموعة الثانية فقد ضمت (359) شخص متوقع إصابتهم بالسل الرئوي وآخرين ثبتت إصابتهم به، هذا وقد أنحصرت أعمار أفراد المجموعتين بين (3-73) سنة، وقد تم جمع العينات خلال (8) أشهر (أبريل-ديسمبر) من سنة 2003 بولاية الخرطوم ومدينة الأبيض بولاية شمال كردفان.

تم عزل (9) سلالات من المستدمية النزلية الوافدة بنسبة 2.2% من النسبة الكلية للعينات التي تم تشخيصها مختبريا. أوضحت الدراسة وجود سلالات من المستدمية النزلية الوافدة منتجة لانزيم البيتا لاكتاماز (أى مقاومة للبنسلين) بنسبة 42,9% من مجموع السلالات التي تتنمي للمجموعة المحفوظة من النمط (b)، حيث بلغت نسبة الأخيرة 77,8% من جملة السلالات المتحصل عليها.

وجود الميكروب كمسبب للالتهاب الرئوي ارتبط بفصول السنة، نوع الوسط الغذائي المستخدم لإستنباته والفئات العمرية التي خضعت للدراسة. حيث تم عزل الميكروب بنجاح في فصل الخريف والشتاء (عينة واحدة في نهاية فصل الخريف، و 8 عينات في فصل الشتاء)، بينما لم يتم العزل بنجاح في فصل الصيف. أيضا تم عزل الميكروب على الوسط الغذائي المعروف ب (GC agar)، بينما لم ينجح العزل على الوسط المعروف بagar الشوكولاتة. كذلك انحصر عزل الميكروب في فئتي الأطفال (3-18 سنة) والمسنين (67-73 سنة) بصورة ملحوظة.

توصلت الدراسة إلى إمكانية حفظ الميكروب ذي درجات حرارة تتفاوت مابين (8-4) درجات مئوية لمدة تتراوح بين (10-15) يوم.

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## Abbreviations

1. **ACIP** : Advisory committee on immunization practices.
2. **AIDS** : Acquired immunodeficiency syndrome.
3. **ATCC** : American Type Culture Collection.
4. **CAP** : Community-acquired pneumonia.
5. **CDC** : Centres for Diseases Control and Prevention
6. **CRM** : Cross-reacting material
7. **CSF** : Cerebrospinal fluid.
8. **F** : Fertility factor.
9. **Hboc** : *Haemophilus. Influenzae* type b oligosaccharid conjugate.
10. **Hi** : *Haemophilus influenzae*.
11. **Hib** : *Haemophilus influenzae* type b.
12. **HIID** : *Haemophilus influenzae* invasive disease.
13. **LPS** : Lipopolysaccharide.
14. **Mw** : Molecular weight.
15. **NAD** : Nicatinamide adenine dinucleotide.
16. **NADP** : Nicatinamide adenine dinucleotide phosphate.
17. **PABA** : Para-aminobenzoiz acid.
18. **PBPs** : Penicillin Binding Proteins.
19. **PCR** : Polymerase chain reaction.
20. **PRP** : Polyeriboseribitol phosphate.
21. **RTI** : Respiratory tract infection.
22. **WHO** : World Health Organization.