МІНІСТЕРСТВО ОХОРОНИ ЗДОРОВ'Я УКРАЇНИ
ВИЩИЙ ДЕРЖАВНИЙ НАВЧАЛЬНИЙ ЗАКЛАД УКРАЇНИ
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»

М А Т Е Р І А Л И

100 – ї
підсумкової наукової конференції
професорсько-викладацького персоналу
Вищого державного навчального закладу України
«БУКОВИНСЬКИЙ ДЕРЖАВНИЙ МЕДИЧНИЙ УНІВЕРСИТЕТ»
11, 13, 18 лютого 2019 року

(присвячена 75 - річчю БДМУ)

Чернівці – 2019

УДК 001:378.12(477.85)
ББК 72:74.58
М 34

Матеріали 100 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет», присвяченої 75-річчю БДМУ (м. Чернівці, 11, 13, 18 лютого 2019 р.) – Чернівці: Медуніверситет, 2019. – 544 с. іл.

ББК 72:74.58

У збірнику представлені матеріали 100 – ї підсумкової наукової конференції професорсько-викладацького персоналу вищого державного навчального закладу України «Буковинський державний медичний університет», присвяченої 75-річчю БДМУ (м.Чернівці, 11, 13, 18 лютого 2019 р.) із стилістикою та орфографією у авторській редакції. Публікації присвячені актуальним проблемам фундаментальної, теоретичної та клінічної медицини.

ISBN 978-966-697-543-3

ZaitsevV.I.

ANTIBIOTICS – HOW IT STARTED

Department of Urology and Neurosurgery
Higher State Educational Establishment of Ukraine
«Bukovinian State Medical University»

Creation of antibiotics and the fight against infection are a history deserving a novel. English deliberation and American enterprise combined in strange, but delicious lettuce. Just a few facts about infections in pre antibiotics era: death rate from pneumonia was up to 90%, huge post-natal death rate, in the 14thcentury 25% of population in Europe died due to plague. In addition, the majority of population was infected by tuberculosis and during the First World War much more soldiers died from infection than from bullets and whiz bangs.

It is well-known that penicillin was discovered by Sir Alexander Fleming in 1928 but neither he nor other scientists realized the importance of it. Only in 10 later (!!!) a group of Howard Florey (Oxford) became interested in the first publication about penicillin (with Ernst Chain). They have started intensive work with this fungus. Due to them penicillin was firstly successfully excreted, stabilized and tested on mice in May of 1940. At that time main devices for growing penicillin were baths, milk cans, night-stool but obtaining it in a sufficient amounts was not achievable. Penicillin was tested for the first time in real practice on the policeman of Alexander Albert whose face was scratched with roses during work in a garden. He got a severe infection and for half-year (!) he was treated in an infectious department. He had a few complicated surgeries on his face, his eye was removed and he was close to death. As a very last step he agreed to try the new drug. After the first injection of penicillin his condition improved, he began to eat, but in a month he died anyway simply because penicillin was run out.

The WWII started and Howard Florey carried the strain of penicillin in lining of his coat in case of German invasion of England. To continue his research, he moved to the USA in 1941 where the importance of penicillin was immediately recognized – the production of penicillin was prioritized just below the Manhattan project. However, in 1943 penicillin production was extremely limited – just enough for few lucky persons (course of treatment costs 200 $ - huge amount for that time). Different variants to increase penicillin production were tested – for example, re-use of penicillin from urine of already treated soldiers (prohibition of alcohol usage during antibiotics treatment originated from those times because it complicated penicillin excretion). The most productive strain of fungus was searched simultaneously – and absolutely by chance it was found in a rottendyne on the market alongside. But war lasted and landing in Normandy was planned soon. A small company Pfizer (producer of components for carbonated drinks) also participated in this search. Technicians of Pfizer took invested all company's money in equipment of 14 huge vats with system of air supply – this was a wonderful (but absolutely unverified!) idea for increasing the production of penicillin. The amount of received fungus exceeded expectation by 5 times and 2 months prior to landing in Normandy Pfizer succeeded with industrial penicillin production. As a result, the long-term hospitalization was almost absent among landed American troops. Is it one of the aspects of success of these condfront?

"Nature makes penicillin; I just found it. " – Alexander Fleming.