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Medication and Air Traffic Control

Introduction

The layman who spends a few hours in a control-room has quickly understood that the controller's work involves tension and demands rapid reflexes, a judgement which must be infallible, quick and sometimes instantaneous, and constant alertness. The controller must therefore have certain physical and psychological attributes. Many factors will enter into such good physical and psychological condition (his social life, times spent commuting for instance, his married life, his professional environment: noise, correct or inadequate lighting conditions, and above all his health). A well conceived healthy life can maintain and improve health but most often one turns to medicines in order to palliate failings. Their action more and more shows up with the major effects particularly noticeable but with secondary effects too, which also pose a great many problems; thus, it is interesting to confront the function of control and the usage of certain medicines or drugs.

Purpose

The Sub C 4 medical is of the opinion that for the ATCO (*****) some regulations and prescriptions should exist regarding the consumption of alcohol, drugs, local and general dental and other anaesthetics, especially as most of the ATCO's are not aware of the effects of medication on their performance.
ATCO = every individual being occupied with objectives in active air traffic control.

Further, we are convinced that a policy upon "medication and ATC" is part of the aims of IFATCA. In order to establish such a policy the Sub C 4 medical asked the MA's of IFATCA (by means of a questionnaire) if in their country such regulations and prescriptions already exist. 42 MA's were asked but only 16 MA's did answer! Anyway, as the table below shows, the great majority had to answer - "no regulations exist".

	REGULATIONS EXIST				NO REGULATIONS			
	Alcohol				Alcohol			
	Before	During	Drugs	Atst#	Before	During	Drugs	Atst#
Member of ICAO	9	3*	2*	1*	6	6	7	8
Not ICAO	7	3	5**	1	4	2	6	7
TOTAL	16	6	7	2	10	8	13	15

Atst# = Anaesthetics

***** 1 country with recommendations for:

1. alcohol : should not be taken (for) 8 hours before duty, or at all on duty

2. drugs : which should be avoided: sleeping tablets, antibiotics, tranquillisers, sedatives, anti-histamines, all "pep"-pills, drugs for the treatment of Hay-Fever, drugs for the treatment of the Blood-Pressure.

3. anaesthetics: 24 hours should elapse following local dental or other anaesthetics.

** 2 countries with recommendations for:
alcohol alcohol-concentration in the blood should never exceed 0,40/00 respectively 0,5 0/00.

With the aid of the "Guide to Drug Hazards in Aviation Medicine" (published by the FAA), the "Aeronautical Information Circular No 15/1974" UK (published in "The controller" No 3/1974) and some specialists, we tried to establish the necessary recommendations.

Discussion

The controller can have three different attitudes according to his state of life:

- The latter can seem to be excellent and not to require any particular medical treatment and yet be submitted to agents not commonly considered as drugs but which it is good to study within the framework of a general preventive hygiene.
- A second attitude can be considered: When health is not really disturbed but suffers from slight problems which, without necessitating any medical advice can prompt the controller to a self treatment for a welfare of physical order. Who does not dream of a miracle tablet assuring without problem remission, comfort and well being? But the dangers of self-treatment are not negligible. Thus, for example the antihistaminics (pain-killers) innocently taken one hour before working to relieve an allergy, through their secondary effects will directly lead to somnolence, to lack of decision and at the limit, to the unheeding gaze on the radar screen with airplanes going towards the same point, at the same level, at the same time, briefly what controllers call in their jargon a conflict, without his being particularly affected. Almost all the anti-allergical products are responsible (painkillers against hay fever or hives).

We should mention that in the particular case of the antihistaminics a commercial aviation pilot should wait for twenty four hours after the end of his treatment to fly again and that generally speaking a pilot should not fly under the influence of medicines. It is therefore wise to ask the chemist of the medicine he is providing is compatible with the requisite vigilance of the controller.

- A third case could finally occur, this is when the human machine fails to "work well", the controller then calls the specialist. It becomes then obvious that every

visit of the controller to the doctor should include telling the doctor the nature of his work.

It is hard to imagine the controller being affected by stress, and having several problems of living and assuring his work serenely to leave the doctor's consulting-room with a prescription including tranquillisers, relaxers or other euphoriants which would permit the individual to resume work the day after, without the slightest worry. As the taking of a medicine should never deprive the controller of his lucidity, his immediate conscience and his instantaneous reactions to the problems which arise, one is led to consider two kinds of medicines.

- The medicines which should be taken with great precautions (realising the retentive effect, among others, of certain products).
- The medicines to avoid totally at work.

Medicines to use with precautions

- Antibiotics (penicillin and the various mycins and cyclines) which can provoke allergic accidents and are debilitating. Moreover, certain antibiotics display serious drawbacks for the controller if they are used without precautions. It is the case of the Dihydrostreptomycin which is prolonged treatment has a neurotoxical action on the internal inner ear. At the level of the vestibular nerve which gives troubles with balance and vertigo. At the level of the cochlea nerve which provokes a more or less noticeable diminution of hearing but whose lesions are always irreversible. Using it in the shape of Panthotenat means reducing its toxicity.
- Sulfamides which, beside manifestations of allergy and asthenia, can provoke nervous or hepatic accidents (it is worth mentioning that the Sulfathiazol can affect depth vision).
- Anti-inflammatories
  - Corticoidal type: provoke digestive troubles which add to those provoked by stress to which the controller is so often subjected.
  - Salicylate of soda: which, by itself, can provoke digestive troubles nervous troubles or sensory troubles (buzzing of the ears) and contractions.
- Antipyretics analgesics associations can have a depressive action.
- Certain syrups against coughing those which contain aconite which, if taken in strong doses, make heartbeats heavier.
- Local anaesthetics such as the Procaine found in many tablets for throat irritations.
- Atihistaminics which all provoke somnolence progressively and insidiously; inattention, an impairing of the mental faculties, sometimes vertigo.
- Diuretics can provoke hypertension.
- Certain hypotensers all delivered by a medical prescription.

Forbidden medicines

- Tranquillisers
- Hypnotics
- Stimulants of the amphetamine type which at first provoke a time of euphoria leading to recklessness and which later have a strong depressive action leaving the individual indifferent to the things around him.

To this group, the anorexigens can be connected, which have exactly the same type of action though used not as anti fatigue but as a medical treatment against obesity. It should be mentioned that these medicines are delivered in many countries only with a medical prescription and that the amphetamines and certain anorexigens have been subjected to the narcotic legislation for few years.

Sleeping tablets

These dull the senses, cause mental confusion and slow reaction times. The duration of effect is variable from person to person and may be unduly prolonged. Controllers should have expert medical advice before using them.

Alcohol and tobacco

If, on the one hand, tobacco has no real immediate effective on the control, on the other hand, the five hundred chemical products of smoke (swallowed or inhaled) will, in the long run, end by seriously impairing the controller's general state and can lead to the various cancers of throat, larynx or lungs. As far as alcohol is concerned, if one can hardly conceive of a controller's sitting down to the radio (frequency) in a drunken state, one equally is hard to put to accept that this person should have entire freedom to "sock it up" at will. Indeed, in the particular case of alcohol, the danger does not come from a delay of reflex but from a delay in the making of a decision or an absence of it, something which is difficult to admit for the controller.

General dental anaesthesia (see Annex 1 to this WP)

Even though the actual duration of the effect of anaesthesia injected for dental treatment is between 30 min and 2 hours, factors such as breakdown time within the organism, after effects (swelling, speech), and possible psychic reactions (distracted) are different from case to case to such an extent that a well defined longer period of rest becomes an absolute necessity for safety reasons.

Conclusion

Generally speaking one must keep constantly in mind that each absorption of medicine is a particular case and that the pharmacology must take into account various factors as:

- Body weight of the individual
- Fast or digestion state
- Interference medicine-food

- Interference medicine-medicine. A medicine can change or annul the effect of another when the two are taken together.
- State of fatigue which increases the sensibility of certain drugs
- The time of absorption (a hypnotic taken at midday has less effect than taken at midnight) which can alter the global effect of the medicinal substance.

For more detailed information we suggest the "Guide to Drug Hazards in Aviation Medicine" published by the Aviation Medical Service of the FAA. Further, every Association should establish a list with the most common medicines in order to give the ATCO guideline for medicines which he can take without being unfit for work. This, of course, should be done with the assistance of a specialist (e.g. check-physician, medical-board etc.)

Recommendation

Member Associations should approach their respective Administrations to establish a list of the most common groups of drugs and medicines available in their country in order to give the controller guidance concerning medication which may or may not be compatible with the ATC work.

ANNEX 1 to WP58 of 1976

Dental Anaesthesia

In an inquiry, competent professors of anaesthetics were asked:

> "In your opinion, for how long should an air traffic controller be declared as unfit to work, following treatment involving routine local or conduction anaesthesia with or without vasoconstrictor?"

The following recommendation can be derived from the results of this inquiry:

An air traffic controller should not work as such for a period of at least 12 hours following dental treatment under anaesthesia.

Explanation:

Even though the actual duration of the effect of anaesthesia injected for dental treatment is between 30 min and 2 hours, factors such as breakdown time within the organism, after effects (swelling, speech!), and possible psychic reactions (distracted) are different from case to case to such an extent that a well defined longer period of rest becomes an absolute necessity for safety reasons.

Note: We are obliged to the following specialists for their contributions to this inquiry:

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The evaluation of the results of this inquiry as well as the formulation of the recommendation with explanation was done by:

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ANNEX 2 to WP58 of 1976

Medicaments Glossary

Anti-Allergic:	Desensitising medicament which is opposed to the sensitisation of the human body from a foreign substance.
Antibiotic:	Microbicide, germ-killer or substance which is opposed to the life of some microbes by perturbing their metabolism.
Antihistaminic:	Desensitising substance which is opposed to the results of histamine (histamine is a substance stimulating secretions).
Anti-inflammatory:	Substance fighting inflammations
Antineuralgic:	Sedative drug against neuralgia (soothing drug)
Antipyretic:	Reducing temperature
Analgesic:	Against suffering
Anaesthetic:	Inducing local or general insensibility (anaesthesia)
Amphetamine:	Medicament which excites (or stimulates) the nervous system and increases physical and psychical activity
Anorexigen:	Substance or medicament inducing anorexia or loss of appetite
Aconite:	Substance which goes into the making of some medicaments. Aconite is a potent antine uralgic and a medicament relieving congestion. This chemical is very dangerous because therapeutic and toxic doses are very close together (used in case of laryngitis, angina bronchitis, influenza, gout, etc...)
Corticoid:	This synthetic hormone palliates the deficiency of surrenal cortex (periphery of adrenal gland) concerning its anti-inflammatory action
Contracture:	Long-continued and involuntary contraction of one or several muscles without muscle fibre lesion
Diuretic:	Agent increasing urinary secretion
Hypnotic:	Inducing sleep
Hypotension:	Low blood pressure
Cochlear Nerve:	This nerve-situated in the internal part of the ear- concerns the hearing
Vestibular Nerve:	This nerve concerns the balancing of the body and is situated in the internal part of the ear
Neurotoxic:	A toxic which takes effects upon the nervous system by causing paralysis
Panthothenate:	Salt of the panthothenic acid (Vitamin B5)

Procaine:	local anaesthetic
Sulphamide:	Substance which is opposed to the life of some microbes by preventing their development or growth
Salicylate of Soda:	Salts from salicylic acid. Belong to the family of salicylic salts as Aspirin. These salts are analgesic and antipyretic substances.
Tachycardia:	Acceleration of heart-beats rhythm. Tachycardia may induce dizziness.

Back to Policy