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SULPHAPYRIDINE COMPOSITION OF LOW TOXICITY

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2 Claims. (Cl. 167—65)

This invention relates to therapeutic materials of lowered toxicity. More particularly, it relates to therapeutic agents comprising sulphapyridine in association with material lowering the toxicity thereof.

Sulphapyridine is a drug that is widely used in the treatment of diseases or infections caused by certain micro-organisms, notably pneumonia and similar diseases. The sulphapyridine is generally regarded as achieving its therapeutic effect by destroying or affecting the micro-organism. The amount of the drug that may be administered in the treatment of the disease, however, is usually less than the amount that would obtain the maximum, or in many cases a sufficient or desirable, therapeutic effect. This limit is occasioned by the toxic action of the sulphapyridine. This is one of the principal difficulties involved in the administration of sulphapyridine. In many cases where the disease is advanced, the patient cannot tolerate a sufficient amount of the drug to check the action of the micro-organisms. In other cases the tolerance of the patient is so low as to make it impossible to use an effective amount of the sulphapyridine and it therefore cannot be used as a therapeutic measure.

It is an object of our invention to provide a therapeutic agent comprising sulphapyridine which is non-toxic or of reduced toxicity and which can be administered in greater amounts in most cases, or at least in the usual amounts without an objectionable toxic effect on the human being.

As is apparent from the above description, the sulphapyridine has two characteristics; one is its therapeutic effect achieved through its action on the micro-organisms and the other is its toxic effect resulting from the toxic action of the sulphapyridine on the animal body. It would be relatively simple to modify the sulphapyridine or its action so as to alter its toxicity along with its therapeutic effect. However, it is not a simple matter to alter one of these characteristics without altering the other, i. e., to alter the toxicity without destroying the therapeutic effect.

The action and theory of detoxication has been appreciated heretofore, and in general, a detoxifying material is thought to combine or coact with the drug in the body in such a manner as to mask the toxic characteristic while leaving unaltered the structural characteristic of the compound that is responsible for the therapeutic effect. But the exact action of various materials is little known, and the nature of detoxicants or their action with a particular drug so as not to affect its therapeutic effect cannot be predicted from any available knowledge.

We have discovered that if glycine or an equivalent compound, is administered at the same time as the sulphapyridine, the toxic properties of sulphapyridine on the human system are eliminated or greatly reduced and minimized, but at the same time the therapeutic effect of the sulphapyridine is not appreciably interfered with. It is possible, therefore, to give a dosage of the sulphapyridine which is effective in its action against the micro-organisms without adversely affecting the patient.

It is a further object of our invention therefore to provide a therapeutic agent comprising in combination sulphapyridine with glycine and its equivalents, i. e., its precursors and biochemically related compounds.

In accordance with our invention, the sulphapyridine may be admixed in the desired proportions with the glycine or equivalent compounds in either a dry mixture or in solution. This mixture may then be administered in the same way that sulphapyridine is normally administered, namely, orally, parenterally, rectally, etc. While the glycine acid may be administered to the human body separately from the sulphapyridine, we find it more convenient to administer them as a mixture since this assures that the proper amount of both ingredients will be administered at the same time, and also eliminates the necessity for administering two drugs which would be less convenient and might give rise to misunderstanding as to the amount and nature of the administration.

Upon being taken into the body, the sulphapyridine and glycine coact or react to produce a material having the non-toxic, therapeutic effect. If desired, the sulphapyridine and glycine may be reacted in the laboratory in a manner similar to the action that takes place in the body in order to provide a single new compound which may be administered to produce the non-toxic therapeutic effect. Such compounds are hitherto unknown.

The proportions of the materials are not critical, since glycine is found in and formed from dietary components and may therefore be viewed as foods for the human body. They may be taken into the body in relatively large amounts without any harmful action. The upper limit of the proportion of glycine in our composition is therefore very high, although as a practical matter, in most instances, there is a maximum amount beyond which enhanced results are not

obtained. Very small amounts of glycine obtain improved results, and there is no minimum below which some improvement is not obtained. The proportions may also vary somewhat depending upon the tolerances and peculiarities of the patient with respect to the sulphapyridine. In general, however, we find a mixture comprising 1 to 50 parts of glycine in admixture with 5 parts of sulphapyridine to be suitable in most instances. Satisfactory results are usually obtained when the mixture comprises equal parts.

It will be apparent that we have provided therapeutic material having superior and advantageous non-toxic properties, as described in the specification and following claims forming a part thereof.

We claim:

1. A therapeutic agent for use in connection with the treatment of diseases caused by micro-organisms, comprising sulphapyridine for combatting said micro-organisms and disease, in association with glycine to lower the toxicity of said sulphapyridine without materially impairing the therapeutic effect thereof.

2. A therapeutic composition of matter consisting of sulphapyridine and glycine.

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