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COVID Face Mask Contributed To Patient Death - a LASA Number Error

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INTRODUCTION

Recent news stories from the United Kingdom (1-3) reported a fatal event related to COVID – not involving viral infection but related to wearing the COVID mask. The COVID face mask contributed to a patient cause of death – note***contributed*** terminology. This error represents an application of Look Alike-Sound Alike (LASA) medication errors – a LASA error with numbers.

NEWS STORY

Covid face masks contributed to death of epileptic man when junior NHS doctor misheard "15 mg" as "50 mg" before giving patient a fatal dose of anti-seizure drug

- **Coroner said that miscommunication between doctors was aggravated by mask use**
- **Hospital patient John Skinner was admitted to Watford General Hospital in 2020**
- **A junior doctor asked a senior for the dosage but misheard "15" for "50"**
- **An overdose was administered, and Mr. Skinner died from acute heart failure.**

An epileptic man died after being given a drug overdose by National Health Service (NHS) medics following a miscommunication which was aggravated by the use of Covid face masks. The junior doctor administered 3x the correct dose of the anti-epileptic drug phenytoin after mishearing instruction from his senior.

The patient died at Watford General Hospital, Vicarage Road, Watford, Hertfordshire, England, in May 2020. The coroner ruled that death was the result of a failure in verbal communication between the doctors -- aggravated because both were wearing COVID masks. The coroner also warned of risk of similar failures unless the hospital used clearer means of

communication. The coroner's report was issued in February 2022.

Event Details

The patient was admitted to the hospital after suffering from seizures at the start of the COVID-19 pandemic. Phenytoin, a frequently used epilepsy medication, was ordered. The junior physician treating the patient sought dosage advice from a hospital senior physician. A dose of 15 mg/kg was misheard as 50 mg/kg; the 50 mg/kg dose was then administered to the patient. Patient death occurred within several minutes. The rapidity of death is suggestive of intravenous drug administration. The coroner's report ascribed death to acute heart failure and phenytoin toxicity.

Phenytoin – A High-Alert Drug

Phenytoin is widely used for treatment of seizures**.** Epilepsy treatment with phenytoin was first reported in 1936. Phenytoin is listed on the WHO list of essential medications. The package inserts for phenytoin injection cautions against increased risk of adverse cardiovascular effects with rapid IV injection; an injection rate not exceeding 50 mg/minute is recommended for adults. Slower injection rates are recommended for the elderly and other susceptible patients (4). Phenytoin is available as 30 mg and 100 mg immediate-release capsules; 100 mg, 200 mg, and 300 mg extended-release capsules; 50 mg chewable tablets, 125 mg/5mL oral suspension, and 50 mg/mL injection in syringes and in multiple size vials. The original proprietary name for phenytoin products is Dilantin®. Other proprietary product names and dosage forms may be available globally.

Phenytoin has been identified by the Institute for Safe Medication Practice (ISMP) as a high-alert medication (5). High-alert drugs are defined as "drugs that bear a heightened risk of causing significant patient harm when they are used in error." While the incidence of mistakes with high-alert drugs may or may not be high, the consequences of these errors are clearly more devastating to patients; high-alert medications have potential to cause serious harm and even death.

Phenytoin is a narrow therapeutic index drug. The phenytoin therapeutic index is 2, meaning that the phenytoin toxic dose is only twice that of the therapeutic dose (6). Although specific dosage details (patient information, weight, route of administration, etc.) in the newspaper reports are minimal, phenytoin dosage of 3500 mg was administered to the patient – a significant overdosage. The usual phenytoin dosage to control epilepsy is 200 mg to 500 mg per day usually administered via an oral route of administration.

Numerous reports of phenytoin adverse events including fatalities have been reported with patients of all ages. Causes for these events are varied, dosage errors, calculation errors, automatic dosage changes by electronic systems, and other causes. Phenytoin is also known to interact with numerous other drugs. Effects of other drugs may include increased levels of phenytoin or decreased levels of phenytoin – both of which are important with a narrow therapeutic index drug. When therapeutic drug levels are too low, the drug may not be efficacious; when therapeutic levels are too high, toxicity may result.

LASA ERRORS – DRUG NAMES

A well-known cause of drug medication errors is known as LASA errors –**L**ook**A**like-**S**ound**A** like errors. LASA errors are usually associated with drug names; for example, vin**CRIS**tine and vin**BLAS**tine, cyclo**SPORINE** and cyclo**SERINE**,**NICAR**dipine and**NIFE**dipine, and so on. ISMP has proposed the use of tall man (upper case bolded key letters) drug name lettering format to help distinguish between LASA drug names; FDA has also recommended tall man lettering on specified drugs (7).

The medication error associated with the UK phenytoin fatality described above is a slightly different LASA error – confusion with Look Alike-Sound Alike *numbers* -- 15 and 50 – exacerbated by COVID-masks worn by the two physicians involved. Spoken LASA errors are affected by pronunciations, dialects, accents, and other causes.

LASA ERRORS – NUMBERS

Drug names are an obvious LASA problem. Numbers, however, are another LASA problem that must not be overlooked. Confusion between 13 and 30, 14 and 40, 15 and 50 as in the above phenytoin event, 16 and 60, and so on are potential LASA number problems. Validation and Quality professionals are involved with numbers every day. They must be aware of potential LASA number and other misunderstandings, especially when COVID masks are involved. COVID masks are well known to adversely affect communication, facial recognition, and facial body language. The fatal phenytoin example described above exemplifies the criticality of LASA errors exacerbated by facial masks and is a reminder to be aware of LASA number errors and the potential risks involved.

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