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The epidemiology of amputation inequality extends beyond diabetes in England.

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Lower limb amputation in the population of England with diabetes is excessively prevalent. It is at least six times more common compared with the population without diabetes.[1,2] Approximately 10% of the population aged 50 and over has diabetes[3] with 10% developing foot ulcers[4]. The rising prevalence of diabetes, particularly type 2, is having an increasing and costly impact on health services.[5] The growing burden of diabetes and its complications has led to a national diabetes strategy with examples of significant regional service transformation.[6-7] However, these ignore one key fact – over half of all amputations are in patients that do not have diabetes.[1,8]

Both Ahmad et al[1] and Moxey et al[8] showed that approximately 55% of lower limb amputations performed in England were in people that do not have diabetes. Instead, most were due to peripheral arterial disease. Furthermore, even within the remaining diabetic population, approximately half of all foot ulcers are of mixed aetiology predominately neuro-ischaemic rather than purely neuropathic while between 10%–60% are associated with ischemia in origin[9] (only 5% are due to trauma or cancer[10]).

The Burden of Non-Diabetic Foot Ulceration

Re-interpretation of this diabetes data[1.3,8] highlights a stark reality. 90% of the population aged 50 years and over does not have diabetes and 2% of this population will develop a foot ulcer. So, if the total UK population is 66 million[11] of which 34.6% is 50 and over[12] then approximately 411,000 non-diabetics will develop a foot ulcer. By contrast, only 228,000 of the diabetes population aged 50 and over will develop foot ulcers. The burden of foot ulceration in the non-diabetic population is almost double that of the population with diabetes. Even assuming a 10 fold excess risk in the diabetes population, it can be safely assumed the number of ulcers in the population with and without diabetes is the same - this would fit with the reported proportion of amputations in these groups.

Health Inequalities for Foot Ulceration

There is also an issue of health inequalities in relation to amputation. It has been reported that there is an excessive amputation rate in the South West[13] but if all major amputations are included, there is a North/South, regional, gender and ethnic divide. Major amputation rates are 30% higher in the north of England than the south with 50% variation across regions.[14] Furthermore, the amputation rate is 2.7 times higher in men than women and 70% higher in the Black than White populations.[14-15] The major amputation rate in the population aged 50 and over in England has decreased by 18% over the last ten years but these inequalities remain.[14]

Interestingly, the major amputation rate is falling in the diabetes population faster than the non-diabetes population[14] but minor amputations are rising with the increase driven by non-diabetic men.[1] This might be explained by not only improved service provision for diabetes patients but also poor access to equivalent services for the non-diabetic population.

This situation has implications for both healthcare commissioning and health policy. There is an urgent need to develop the national debate regarding lower limb amputation to include non-diabetic foot lesions. It is encouraging that lower limb tissue loss is a key focus for NHS England's recent National Wound Care Strategy Programme. The priorities in relation to lower limb lesions have yet to be agreed but it is likely that non-diabetic foot ulceration will be high on the list. There is a strong argument that patients with lower limb ulceration due to arterial disease unrelated to diabetes should be able to access the same quality of service as those with diabetes.

Conclusion

Diabetic foot ulceration and subsequent amputation is a significant health inequality that needs addressing but it is dwarfed by the inequalities relating to non-diabetic foot lesions and amputation. An inclusive national strategy is needed that aims to reduce the amputation inequalities seen across all patients. Redesigning services to allow non-diabetics with foot ulcers to access the specialist services found in diabetic foot clinics will go a long way to achieve this goal.

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